

The Mississippi River Campaign 1862-1863: The Impact of Climate and Pathogens on Operational Art at the Port Hudson Siege

A Monograph

by

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Abstract

The Mississippi River Campaign 1862-1863: The Impact of Climate and Pathogens on Operational Art at the Port Hudson Siege, by MAJ Patrick H. Yun, US Army, 63 pages.

History is filled with battles, campaigns, and wars in which commanders did not fully account for the effects of climate and pathogens within their operational environment. Today, commanders sometimes minimize how unfamiliar climates and pathogens can impact the health and well-being of their soldiers, but more importantly, how these variables may adversely affect their overall mission. By analyzing and accounting for the climate of the operational environment, commanders and their staffs will be able to better mitigate diseases and non-battle injuries (DNBI) within their formations, which can help maintain or increase their relative combat power, tempo, and operational reach. This is especially true when armies are operating in new environments known to be insalubrious and disease-ridden. This monograph examines Major General Nathaniel Banks's Port Hudson campaign in 1863, which provides a useful case study about how climatic factors, including local disease and environments, adversely impacted a commander's ability to arrange tactical actions in time, space, and purpose. While Banks ultimately succeeded in capturing Port Hudson, it came at a high cost of losing a third of his men, which four-thousand of them were attributed to climatic factors. This led Banks's army to culminate and forced him to reconstitute before future operations.

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Acronyms

ADRP	Army Doctrinal Reference Publication
ATP	Army Techniques Publication
CACD	Commander's Appreciation and Campaign Design
CCHF	Crimean-Congo Hemorrhagic Fever
COIN	Counter-Insurgency
DNBI	Disease and Non-Battle Injuries
DOD	Department of Defense
IPB	Intelligence Preparation of the Battlefield/Battlespace
MVM	Massachusetts Volunteer Militia
NCO	Non-Commissioned Officer
NSS	National Security Strategy
OE	Operational Environment
OEF	Operation Enduring Freedom
OR	Official Record
QDR	Quadrennial Defense Review
TB	Tuberculosis
TRADOC	Training and Doctrine Command
ULO	Unified Land Operations

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Introduction

Sun Tzu, for one, advised commanders to, “camp on hard ground, the army will be free from disease of every kind, and this will spell victory.”

— David Petriello, *Bacteria and Bayonets*

History is filled with battles, campaigns, and wars in which commanders did not fully account for the effects of climate and pathogens within their operational environment (OE).¹ Today, commanders sometimes minimize how unfamiliar climates and pathogens can impact the health and well-being of their soldiers. Climatic analysis is critical for commanders to consider because climatic factors can reduce combat power prior to encountering the enemy. By analyzing an OE’s climate, commanders and their staffs will be able to better mitigate diseases and non-battle injuries (DNBI) within their formations, which can help maintain or increase their relative combat power, tempo, and operational reach. While commanders have always considered the effects of weather and terrain during the planning and the execution of operations, they often downplay climatic factors, contributing to a loss of relative combat power and the inability to achieve strategic and political objectives. Historically, commanders and organizations have sometimes reached their culmination point earlier than expected because of ineffective mitigations of climatic effects and their associated diseases.

Historical examples of this phenomenon stretch far back to antiquity when Thucydides wrote about the great plague of Athens or when the “Justinian Plague doomed the impending reconquest of Italy by the Byzantine Empire.”² Modern examples like the Guadalcanal campaign,

¹ Army Doctrinal Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2012), 1-1. “An operational environment is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander.”

² David Petriello, *Bacteria and Bayonets: The Impact of Disease in American Military History* (Havertown, PA: Casemate Publishers, 2016), 9.

where the United States Marines realized that “malaria caused five times as many casualties as the Japanese,” or when the besieged French forces at Dien Bien Phu were significantly affected by the unrelenting rain at their untenable fighting positions, demonstrated the role of climatic factors on operations.³ A contemporary example occurred in 2009, when an American Non-Commissioned Officer (NCO) contracted a deadly strain of viral hemorrhagic fever while operating in southern Afghanistan. While medical teams in southern Afghanistan were prepared to handle diseases that were prevalent in the area, they were initially caught off guard that a soldier was infected with the Crimean-Congo Hemorrhagic Fever (CCHF), which could have easily spread within the unit and caused a battalion-size task force to become combat ineffective.⁴ Ironically, medical officials and the World Health Organization acknowledged that CCHF is endemic in that part of Afghanistan, but no one expected soldiers who were operating in the area to contract such a pathogen.⁵ It was later determined that this NCO was bitten by a tick carrying the CCHF virus, which were ubiquitous in the semiarid area of the Arghandab River Valley where he was operating.⁶

³ Richard B. Frank, *Guadalcanal: The Definitive Account of the Landmark Battle* (New York: Random House, 1990), 260; Harold A Winters, *Battling the Elements: Weather and Terrain in the Conduct of War* (Baltimore: Johns Hopkins University Press, 1998), 243-246.

⁴ Nancy Montgomery, “2009 Case of Hemorrhagic Fever Similar to US Military’s Ebola Fight,” *Stars and Stripes*, November 16, 2014, accessed November 4, 2016, <http://www.stripes.com/news/2009-case-of-hemorrhagic-fever-similar-to-us-military-s-ebola-fight-1.314511>; Nicholas Conger, Kristopher Paolino, Erik Osborn, Janice Rusnak, Stephan Günther, Jane Pool, Pierre E. Rollin, Patrick Allan, Jonas Schmidt-Chanasit, Toni Rieger, and Mark Kortepeter, “Health Care Response to CCHF in US Soldier and Nosocomial Transmission to Health Care Providers, Germany, 2009,” *Emerging Infectious Diseases* 21, no. 1 (January 2015), accessed November 4, 2016, <http://dx.doi.org/10.3201/eid2101.141413>.

⁵ Conger et.al., “Crimean-Congo hemorrhagic fever,” World Health Organization, last modified January 2013, accessed October 7, 2016, <http://www.who.int/mediacentre/factsheets/fs208/en/>.

⁶ Michael Levin, Hyalomma Spp, *The Merck Veterinary Manual*, last modified May 2015, accessed October 07, 2016, http://www.merckvetmanual.com/mvm/integumentary_system/ticks/hyalomma_spp.html; “Hyalomma ticks are often the most abundant tick parasites of livestock, including camels, [that live in climates that are] warm, arid, and semiarid [conditions], generally harsh lowland and middle altitude biotopes, and those with long dry seasons.”

While it is arguably difficult to make broad generalizations about the military's readiness based on this single event, it does highlight a gap in the military's planning process of identifying endemic pathogens in unfamiliar operational environments.

This monograph, therefore, examines some common assumptions that commanders have made about climate and what impacts it can potentially have on their operation or campaign. The first assumption is that battles and operations will only last a relatively short amount of time, keeping the effects of the climate on soldiers to a minimum. Relatable to this assumption is that soldiers and material capabilities will be able to adapt relatively quickly to the climatic conditions of the battlefield, overcoming any short-term challenges. Commanders and planners often rely on the trained resilience of their individual soldiers and assume that technology and modern medicine will be able to help them overcome any perceived challenges or effects. Therefore, minimal effort is spent within the planning and operations process to analyze the climate beyond cursory acknowledgements about weather phenomenon. The second assumption is that battlefield medicine will be able to treat most ailments, injuries, or illnesses that soldiers encounter during an operation, allowing commanders to regenerate manpower at forward positions. More specifically, commanders and planners presume that their medical capabilities will be able to provide definitive treatments to soldiers sickened by climatic or environmental factors, allowing them to preserve enough manpower to execute their planned operations without pause. Major General Nathaniel Banks's siege of Port Hudson in 1863, the primary focus of this monograph, provide a useful case study about how climatic factors, including local disease and environments, can impact a commander's ability to arrange tactical actions in time, space, and purpose to meet strategic aims.

Although this case study may seem obsolete and inapplicable to a modern audience, the Army's new operating concept, Training and Doctrine Pamphlet 525-3-1, *The US Army Operating Concept: Win in a Complex World*, states that leaders must be prepared to fight in an operating environment that is "unknowable and constantly changing."⁷ Integrating climatic analysis into planning and execution consideration is crucial for successful operations in the current OE. According to the 2015 National Military Strategy, American forces are now "more likely to face prolonged campaigns than conflicts that are resolved quickly."⁸ This presumption is articulated and considered at the Army's operational and tactical level where the Army's TRADOC Pamphlet 525-5-500, *Commander's Appreciation and Campaign Design*, states that "brigade and battalion commanders may fight short and intense battles or engagements within the context of large campaigns of operational maneuver, but these will be rare and brief occurrences."⁹ For these reasons, analyzing the long-term effects of the climate on friendly forces will be an important variable for commanders at all levels to consider in order to mitigate operational risk and prevent premature culmination. While several Army publications, training circulars, and regulation manuals recommend that the effects of the climate be accounted for, the Army's deliberate planning and operations process overlooks the topic. Commanders and planners should seek to incorporate the variable of climate in the planning process in future conflicts, contingencies, and campaigns.

⁷ Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The US Army Operating Concept: Win in a Complex World 2020-2040* (Fort Eustis: Training and Doctrine Command, 2014), iii.

⁸ The US Joint Chiefs of Staff, *The National Military Strategy of the United States of America 2015* (Washington, DC: Joint Chiefs of Staff, June 2015), 3, accessed 4 November 2016, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.

⁹ TRADOC Pamphlet 525-5-500, *Commander's Appreciation and Campaign Design (CACD)* (Washington, DC: Government Printing Office, 2008), 12.

Climate Impacts and Doctrine

The topic of climate is not limited to a certain level of war. Rather, it is an integrating topic that permeates, connects, and influences all echelons. At the strategic and political levels, climate, in the words of the 2010 Quadrennial Defense Review (QDR), “may act as an accelerant of instability or conflict, placing a burden to respond on civilian institutions and militaries around the world.”¹⁰ Additionally, the manifestation of climate change attributable to rising sea levels may threaten coastline cities and critical infrastructures, create mass human migrations due to food and water scarcity, and increase cases of infectious diseases that overwhelm regional medical capabilities.¹¹ The latter event infringes on national security because it may lead to “changes in land and water use patterns” by both human and animal populations, which can contribute to the spread of infectious diseases such as Lyme disease, tuberculosis (TB), and Hemorrhagic fever.¹² The 2000 report from the National Intelligence Council stated that “climatic shifts are likely to enable some diseases and associated vectors—particularly mosquito-borne diseases such as malaria, yellow fever, and dengue—to spread to new areas.”¹³

These concerns have been articulated and described in various recent Department of Defense (DoD) and national strategic documents. For example, the QDR of 2010 and 2014 both address the significant impacts of global climate change and how it can add “complexity [to]

¹⁰ *Quadrennial Defense Review (QDR) 2010* (Washington, DC: Government Printing Office, 2010), 85.

¹¹ *National Security Strategy (NSS) 2015* (Washington, DC: The White House, February 2015), 12, accessed February 15, 2017, http://www.whitehouse.gov/sites/default/files/docs/2015_national_security_strategy.pdf; *QDR 2010*, 85; Jennifer Brower and Peter Chalk, *The Global Threat of New and Reemerging Infectious Diseases: Reconciling U.S. National Security and Public Health Policy* (Santa Monica, CA: RAND, 2003), 9.

¹² National Intelligence Council, *The Global Infectious Disease Threat and Its Implications for the United States* (Washington, DC: National Intelligence Council, 2000), 22-23.

¹³ *Ibid.*, 24.

future missions” and “shape the operating environment, roles, and missions” that the DoD will undertake.¹⁴ Furthermore, in 2015, President Barack Obama reinforced the importance of climate change in his National Security Strategy by stating that climate change was a “growing threat to our national security” because of its adverse effects that “increased natural disasters, refugee flows, and conflicts over basic resources like food and water.”¹⁵ Since the world is an “interconnected system,” the President predicted that these events could constrain and/or deplete resources for the United States and will generate new global security challenges and/or humanitarian crisis that will most likely require some type of intervention or assistance.¹⁶ In 2016, the Director of National Intelligence, James Clapper, testified to the US Senate Select Committee on Intelligence that “extreme weather, climate change, [and] environmental degradation, ... will probably exacerbate—and potentially spark—political instability, adverse health conditions, and humanitarian crises.”¹⁷ This is a potential gap that the US Army may have to reconcile and adjust since the topic of climate change or its affects are not mentioned in any of its core planning or operational manuals.¹⁸ However, certain characteristics of climate, including weather phenomenon or atmospheric conditions, are mentioned and considered during the planning and execution of an operation, which the Army calls “operational climatology.”

¹⁴ *QDR 2014* (Washington, DC: Government Printing Office, 2014), 8; *QDR 2010*, 84.

¹⁵ *NSS 2015*, 12.

¹⁶ *Ibid.*, 4.

¹⁷ Office of the Director of National Intelligence, “Statement for the Record: Worldwide Threat Assessment of the US Intelligence Community”, James R. Clapper, Senate Select Committee on Intelligence (Washington, DC: 2016), 14.

¹⁸ Core planning and operational manuals are TRADOC Pamphlet 525-3-1, *The US Army Operating Concept, Win in a Complex World: 2020-2040*; ADRP 3-0, *Unified Land Operations*; Army Doctrinal Reference Publication (ADRP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2012).

According to the Army Techniques Publication (ATP) 2-01.3, *Intelligence Preparation of the Battlefield/Battlespace*, operational climatology constitutes the “effects on weapon systems, collection systems, ground forces, tactics and procedures, enemy [tactics, techniques, and procedures], and other capabilities based on specific weather sensitivity thresholds when operational planning occurs more than ten days prior to the execution.”¹⁹ As defined, operational climatology focuses on how the weather will affect the material and maneuver capabilities of friendly and enemy units while minimizing how climatic factors will impact ground forces. This unfortunately guides commanders and planners to conceptualize the climate in a narrow way because it omits a deeper analysis about how broader climatic factors can influence combat power, operational reach, and tactical risk for both friendly and enemy units. Ironically, the recommendation to analyze the climate beyond material capabilities and maneuver is depicted in multiple Army publications, regulations, and techniques manuals. For example, Chapter 8 of ATP 2-01.3, Change 1, emphasizes that certain aspects of the climate should be considered in order to identify and prevent “non-combat injuries” that climate can have on friendly and enemy forces.²⁰

In the past fourteen years, the US Army at large has been continuously fighting the War on Terror and executing counterinsurgency missions in places like Iraq, Afghanistan, and the Philippines.²¹ During this time, it was not uncommon for soldiers and leaders to deploy multiple times to the same area of operation or at least into the same region year after the year. This allowed commanders and planners to develop and operate off of a paradigm that was based on previous experiences and assumptions, which in most cases excluded further assessment and analysis of climate. While this technique may work in a familiar OE, it is risky to take the same

¹⁹ Army Techniques Publication (ATP) 2-01.3, Change 1, *Intelligence Preparation of the Battlefield/Battlespace* (Washington, DC: Government Printing Office, 2014), 3-6.

²⁰ Ibid., 8-1 to 8-4.

²¹ Gregory Wilson, “Anatomy of a Successful COIN Operation: OEF-Philippines and The Indirect Approach,” *Military Review* 86, no. 6 (August 2008): 38-48.

approach when units deploy to an unfamiliar area with a different mission. By analyzing the climate of their OE holistically, planners and commanders may find that there are region-specific pathogens and vectors (e.g. malaria, dengue fever, cholera, meningococcal meningitis, leishmaniosis, Chagas disease, and Schistosomiasis) that can potentially cause great harm to their formations.

The monograph will explore case studies of Major General Ulysses S. Grant during his Tennessee River Valley campaign and especially Nathaniel Banks during the siege of Port Hudson to exemplify how climate and pathogens influenced prolonged combat operations during the western campaign of the Civil War. Grant's expedition into the Tennessee River Valley, which culminated at Pittsburg Landing, provided some good insights on how sudden and unanticipated climatic changes can have cascading adverse effects on an operation relative to combat power. On the other hand, the siege of Port Hudson in 1863 provides a compelling case study about how both the attacker (Union forces) and defender (Confederate forces) conceptualized the importance of the climate and pathogens on their operational environment but neglected to implement any meaningful mitigation measures to protect their forces. Both sides overlooked the difficulties of contending with environmental threats like malaria or opportunistic pathogens brought about by poor hygiene and unsanitary conditions, which produced a significant amount of non-combat related deaths in the Port Hudson campaign.²² Although Union forces were able to capture the port city after forty-eight days of continuous siege operations, they did so at the expense of losing nearly a third of their thirty-thousand strong army against a relatively inferior foe that was ill-equipped and undermanned.²³

²² Edward Cunningham, *The Port Hudson Campaign, 1862-1863* (Baton Rouge: Louisiana State University Press, 1963), 120-121.

²³ Cunningham, 123.

These staggering losses made it difficult to quickly reconstitute Nathaniel Bank's XIX Corps, which limited his operational reach and prevented any major follow-on operations or campaigns until the following year in 1864.²⁴

The Road to Port Hudson: Historical Overview

In the early summer of 1861, General Winfield Scott proposed a grandiose plan to surround the southern states of the Confederacy by emplacing naval blockades along the Atlantic and Gulf ports, coupled a plan to seize key positions along the Mississippi River.²⁵ The latter objective was the key to the entire plan's success. Controlling the Mississippi River denied the Confederacy a main line of communication utilized to resupply military operations along the east coast but, more importantly, it cut off the main route that supported the economy of the Confederacy and would also split the Confederate Army in two. Scott and other military planners hypothesized that this decisive action would provide Union forces a marked strategic advantage and would force the Confederacy to an early termination. This strategy also provided Union forces a way to end the war on favorable terms and presented an alternative option to avoid executing a full-scale invasion of the southern states that would include enormous amounts of treasure and bloodshed.²⁶ This plan, later dubbed the "Anaconda Plan" by some historians, initially required more than sixty-thousand new ground forces in order to maneuver and secure positions up and down the Mississippi River.²⁷ Additionally, the Anaconda Plan required a

²⁴ Cunningham, xii.

²⁵ United States War Department, *The War of the Rebellion: A Compilation of the Official Records (OR) of the Union and Confederate Armies*, ser. 1, vol. 51 (Washington, DC: Government Printing Office, 1882), 369-370. Scott to McClellan, May 3, 1861 (Hereafter cited as *OR*).

²⁶ Lisa Brady, *War Upon the Land: Military Strategy and the Transformation of Southern Landscapes During the American Civil War* (Athens: University of Georgia Press, 2012), 26.

²⁷ Michael Ballard, *Vicksburg: The Campaign That Opened the Mississippi* (Chapel Hill:

“brown-water navy” that consisted of ironclad ships, mortar flotillas, and transport steamers, shaping the western campaign and “mark[ing] the start of a joint Army-Navy partnership.”²⁸ The fight for the Mississippi River Valley would begin that summer in 1861 in southern Illinois at Cairo and two years later, in 1863, Union forces would finally gain control of the entire Mississippi River with the surrender of Confederate forces at Port Hudson, Louisiana.

The Mississippi River may have been the “backbone of the Rebellion,” but it was also an equally important waterway to Union Midwestern states.²⁹ The river served as an economic and social “lifeline to the outside world” and many communities relied on it for access to trade, commerce, and movement.³⁰ As such, after the bombardment of Fort Sumter in April 1861, Illinois Governor Richard Yates decided to send his state militia to seize the town of Cairo because of its strategic location at the terminus of the Illinois Central Railroad and the confluence of the Mississippi and Ohio rivers.³¹ Yates’s initiative corresponded well with the port blockade order that was given by President Lincoln just a week earlier, in which both actions established the conditions for the execution of Scott’s Anaconda Plan.³² With an initial foothold secured

University of North Carolina Press, 2004), 14. “Scott’s idea, dubbed the Anaconda Plan, after the reptile that specializes in squeezing its prey to death, never became official polity, though Abraham Lincoln and his navy secretary... did like certain aspects of it”; Scott to McClellan, May 3, 1861, *OR*, ser. 1, vol. 51, pt. 1, 369-370.

²⁸ Charles R. Bowery, *The Civil War in the Western Theater 1862* (Washington DC: Government Printing Office, 2014), 19; Benjamin Franklin Cooling, *Forts Henry and Donelson: The Key to the Confederate Heartland* (Knoxville: The University of Tennessee Press, 1987), 13.

²⁹ Jim Miles, *A River Unvexed: A History and Tour Guide to the Campaign for the Mississippi River* (Nashville: Rutledge Hill Press, 1994), viii; Charles R. Bowery, *The Civil War in the Western Theater 1862* (Washington, DC: Government Printing Office, 2014), 7.

³⁰ Warren Grabau, *Ninety-Eight Days: A Geographer’s View of the Vicksburg Campaign* (Knoxville: University of Tennessee Press, 2000), 4.

³¹ Miles, 3.

³² Proclamation from Abraham Lincoln, May 3, 1861, United States War Department, Official Records of the Union and Confederate Navies, in the War of the Rebellion, (*ORN*), ser. 1, vol. 4, 156-157; Miles, 3.

along the Mississippi and Ohio Rivers, Union forces began to fortify their positions along the Missouri River in order to prepare for a possible Confederate invasion to the north.³³ On 25 July 1861, President Lincoln dispatched Major General John C. Fremont to Missouri in order to begin preparations for the eventual Union offensive into the Mississippi and Tennessee River Valleys.³⁴ In order to consolidate Union gains, on 4 September 1861, Fremont ordered Grant to occupy Cairo with his forces in order to fortify the town for possible attacks and to seize any nearby “strategic places.”³⁵ On the same day, Confederate General Leonidas Polk’s forces moved north through Tennessee and seized the towns of Hickman and Columbus on the Mississippi River and began fortifying these positions to repulse any Union offensive.³⁶

³³ Cooling, 10; Miles 17.

³⁴ Bowery, 9. “After gaining control of Missouri, the second army would launch an amphibious expedition down the Mississippi River and seize New Orleans.”

³⁵ Miles, 17.

³⁶ Thomas Yoseloff, *Campaigns of the Civil War*, Vol. 1 (New York: Thomas Yoseloff, 1963), 18.

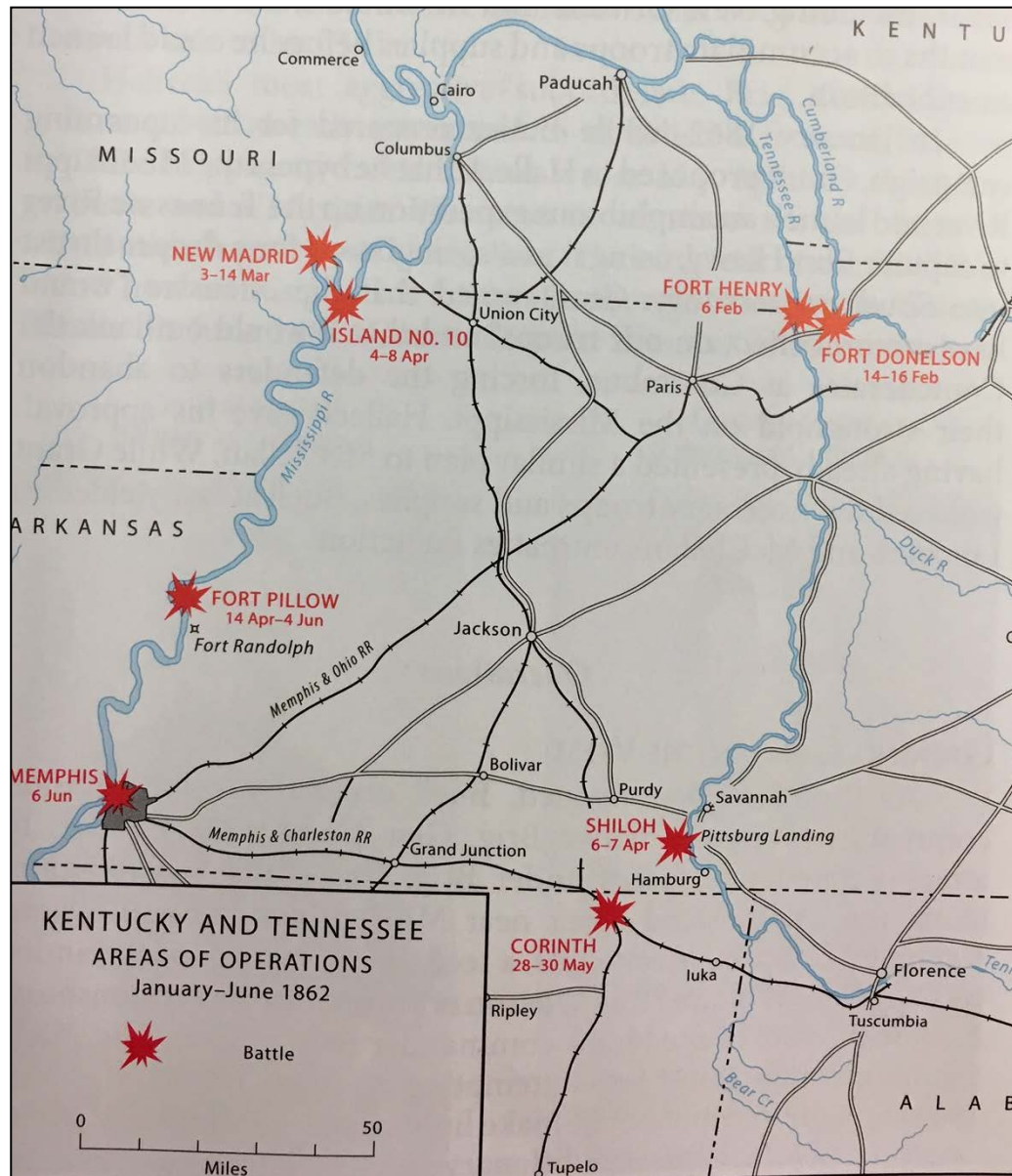


Figure 1. Battles in the Upper Mississippi and Tennessee River Valleys. Charles R. Bowery, *The Civil War in the Western Theater 1862* (Washington DC: Government Printing Office, 2014), 14.

Columbus thus became an important Union objective because of its proximity to the Mississippi River and existing railroad infrastructure. Confederate forces in the town also threatened Union forces to the north in Paducah, Cairo, and other Union territories.³⁷ Elsewhere,

³⁷ Yoseloff, 24; Halleck to McClellan, February 21, 1862, *OR*, ser. 1, vol. 7, 647.

the Confederate General responsible for the western theater, Albert Sidney (A.S.) Johnston, also began to construct defensive works at Bowling Green, Fort Henry, and Fort Donelson in order to engage invading Union forces along the Tennessee and Cumberland Rivers, respectively.³⁸ The Confederate's strategic plan was to establish a perimeter defense along an imaginary east-west line stretching from Columbus to Bowling Green and along the Mississippi River from Columbus, Kentucky, to New Orleans, Louisiana.³⁹ The perimeter defense strategy pleased President Jefferson Davis because it demonstrated "the viability of his new nation...[which meant] protecting the territory, populace, and economic infrastructure – above all, slaves – of all eleven Confederate states."⁴⁰ While the Confederate Army concentrated on building up their defenses at strategic locations, Union forces reorganized and recruited in southern Illinois and Missouri under the new leadership of General Henry Halleck, who was appointed the commander of the new Department of the Missouri on 9 November 1861.⁴¹

Armed with scout reports that heavy defensive constructions were underway in Columbus and Bowling Green, Halleck and Grant identified that the two forts along the Tennessee and Cumberland Rivers, which were still under construction, provided an opportunity to exploit a relative weakness in the Confederacy's perimeter.⁴² On 2 February 1862, Grant and Commodore Andrew H. Foote advanced down the Tennessee River with seventeen-thousand men and seven gunboats in order to seize Fort Henry.⁴³ When Grant's forces landed upriver from Fort

³⁸ Yoseloff, 24.

³⁹ Bowery, 10. "[President] Davis adopted a strategy of territorial defense, stationing forces at critical points along the perimeter of the Confederacy"; Yoseloff, 24; Larry Daniel, *Shiloh: The Battle That Changed the Civil War* (New York: Simon & Schuster, 1997), 18.

⁴⁰ Bowery, 9-10.

⁴¹ Yoseloff, 10.

⁴² Cooling, 67-68.

⁴³ Yoseloff, 28.

Henry on 5 February, he ordered Brigadier General John A. McClernand to “take [the] position on the road from Fort Henry to Fort Donelson and Dover, [and] prevent all reinforcements to Fort Henry or escape from it.”⁴⁴ While the Union army under Grant was slowly surrounding Fort Henry, Foote’s gunships bombarded Fort Henry on the afternoon of 6 February.⁴⁵ The naval bombardment alone convinced Confederate General Lloyd Tilghman to surrender the fort after only two hours.⁴⁶ Following the surrender, Grant and his forces soon discovered that their twelve-mile passage east to Fort Donelson was flooded due to the heavy rain and inclement weather, delaying Grant’s army from moving to their next objective until 12 February.⁴⁷

Grant’s army moved out of Fort Henry early in the morning with fifteen-thousand men and eight batteries, arriving at Fort Donelson’s defensive line by noon on 12 February.⁴⁸ Grant’s forces completed their investment of Fort Donelson by the evening of the 12th and, on the next day, executed their first unsuccessful attack against the Confederate’s defenses.⁴⁹ Grant was eager to seize Fort Donelson, but he understood that he was outnumbered and outmatched. To even the playing field, Grant brought his reserve forces from Fort Henry and also requested more reinforcements from Halleck on 13 February.⁵⁰ Additionally, Foote’s ironclads arrived on the morning of the 14th and, after a meeting with Grant on the river shore, Foote ordered his

⁴⁴ Yoseloff, 31.

⁴⁵ Clement Evans, *Confederate Military History Vol. 8: Tennessee* (Atlanta: Confederate Pub. Co, 1899), 18.

⁴⁶ Ibid., 18; Tilghman report of actions at Fort Henry, February 7, 1862, *OR*, ser. 1, vol. 7, 136.

⁴⁷ Miles, 115.

⁴⁸ Henry Commager, *The Blue and the Gray: The Story of the Civil War As Told by Participants*, vol. 1 (Indianapolis: Bobbs-Merrill, 1950), 343.

⁴⁹ Evans, 21.

⁵⁰ Grant to Halleck, February, 13, 1862, *OR*, ser. 1, vol. 7, 609.

gunships to engage Fort Donelson on the river side.⁵¹ The artillery duel between Foote's gunships and Fort Donelson began around 2:38 p.m but only lasted about two hours after three of Foote's four gunships were destroyed by the Confederate batteries.⁵² With the Union Navy neutralized and unable to provide support from the river, Grant now faced the problem of attacking the fort unilaterally with only his land forces. As he waited for more troops to arrive, Grant continued to improve his investment around Fort Donelson and shifted his focus to preventing Confederates from retreating and receiving reinforcements. To make matters worse, on the evening of the 13th, a strong winter front pushed through the Fort Donelson area, creating miserable conditions for soldiers on both sides.⁵³ On the Union side, Grant recalled that "the suffering of [the] army endured that night can be realized only by those who have passed through similar experiences; many of the wounded froze to death, and it was with great difficulty that the [remaining healthy soldiers] could keep themselves from the same fate."⁵⁴

With the winter conditions reducing the readiness of the Confederate army and recent reports of Grant's forces being reinforced, General Floyd held a council of war with his subordinates on 15 February and "decided that it would be impossible to hold out [the investment] longer."⁵⁵ In the interest of preserving his force, Floyd relinquished command to Buckner so that he could surrender to Grant and then immediately retreat to Nashville with

⁵¹ Cooling, 153-155.

⁵² Ibid., 155-159.

⁵³ Bushrod Johnson's report at Fort Donelson, March, 4, 1862, *OR*, ser. 1, vol. 7, 362; Evans, 27.

⁵⁴ Edward Howland, *Grant As a Soldier and Statesman: Being a Succinct History of His Military and Civil Career* (Hartford: J.B. Burr & Company, 1868), 55. Some of these cold-weather deaths were self-inflicted by soldiers as Grant recalls that the "majority of them, with the recklessness characteristic of new troops, had left or thrown away their overcoats, beguiled by the previous spring-like mildness of the weather."

⁵⁵ Commager, 347.

General Pillow and some of his men.⁵⁶ On the morning of 16 February, Grant wrote to Halleck that he seized Fort Donelson and between twelve-thousand to fifteen-thousand prisoners, including Generals Buckner and Johnson and a large quantity of supplies and armament.⁵⁷ His victory at Fort Donelson brought about a sobering reality for the Confederacy. General Beauregard wrote to General A.S. Johnston that Grant's victory at the twin rivers now opened the way for Federal troops to outflank their strategic positions at Columbus, Nashville, and Memphis, threatening the destruction of the Confederacy's east-west rail lines.⁵⁸ In order to get ahead of the Union's forthcoming attempt to flank these positions, Beauregard ordered the evacuation of General Polk's seventeen-thousand soldier garrison at Columbus. Most of Polk's heavy guns and five-thousand of his men would reinforce the garrisons at Island Number 10 and New Madrid.⁵⁹ Finally, the Confederate garrison at Bowling Green, also facing pressure from Buell's Army of the Ohio, withdrew to Murfreesboro on the same day Fort Donelson surrendered, slowly retreating back to Corinth, where they linked up with many of Beauregard's forces.⁶⁰ The Confederates were consolidating and reorganizing at Corinth in order to mount a counterattack against Grant and planning to re-establish their defensive lines along the Tennessee-Kentucky line.⁶¹

As Grant and Floyd contested the Tennessee River Valley, Union forces commenced a new offensive in the Mississippi River Valley. In order to cut off the Confederate's main southern

⁵⁶ Commager, 347.

⁵⁷ Grant to Halleck, February 16, 1862, *OR*, ser. 1, vol. 7, 625.

⁵⁸ Cooling, 238; Miles, 27; Johnston to Benjamin, February, 8, 1862, *OR*, ser. 1, vol. 7, 130-131; Daniel, 29.

⁵⁹ Miles, 29-30.

⁶⁰ Cooling, 231-232; Commager, 349; Daniel, 43-47.

⁶¹ Cooling, 231-232.

escape route, Halleck appointed Major General John Pope to conduct an operation to seize the town of New Madrid.⁶² When Pope arrived on the outskirts of New Madrid on 3 March with his ten-thousand soldiers, he reported back to Halleck that the “enemy’s whole force there [did] not exceed five-thousand men,” but he could not take the town without losing a significant amount of his own manpower due to the confederate gunships that supported the town.⁶³ Pope requested to Halleck that Commodore Foote’s ironclad join the fight and/or provide him with reinforcements that would augment his strength to thirty-thousand.⁶⁴ Halleck acknowledged Pope’s request but decided that seizing New Madrid required too much combat power to spare, so he ordered Pope to withdraw back to Commerce, Missouri, in order to be re-tasked to Tennessee.⁶⁵ Not wanting to lose his independent command, Pope wrote back to Halleck that he had made progress by seizing the town of Point Pleasant, which effectively cut off the southern route for Confederate forces at New Madrid and Island No. 10.⁶⁶ With this new development, Pope invested New Madrid with his newly-arrived siege cannons and forced the Confederate to surrender there on 14 March.⁶⁷ With New Madrid occupied by Union forces, the only Confederate outpost that remained on the Mississippi River from Cairo to Fort Pillow, near Memphis, was Island No. 10.

On 15 March, Foote’s gunships and mortar boat flotillas arrived to provide support to Pope’s operation.⁶⁸ The bombardment of Island No. 10 began on 17 March, however, Foote soon discovered that an island that was supposed to be minimally manned by the enemy was “stronger

⁶² Larry Daniel and Lynn Bock, *Island No. 10: Struggle for the Mississippi Valley* (Tuscaloosa: University of Alabama Press, 1996), 36.

⁶³ Pope to Halleck, March 3, 1862, *OR*, ser. 1, vol. 8, 582-583.

⁶⁴ Pope to Halleck, March 4, 1862, *OR*, ser. 1, vol. 8, 587-588.

⁶⁵ Halleck to Pope, March, 7, 1862, *OR*, ser. 1, vol. 8, 595.

⁶⁶ Cullum to Halleck, March 8, 1862, *OR*, ser. 1, vol. 8, 597.

⁶⁷ Pope to Halleck, March 14, 1862, *OR*, ser. 1, vol. 8, 613.

⁶⁸ Pope to Halleck, March 17, 1862, *OR*, ser. 1, vol. 8, 621.

and even better adapted for defense than Columbus ever was.”⁶⁹ Since Union forces could not bypass this island on the river without being engaged and/or heavily damaged, Pope recommended to Halleck that a water canal be constructed on the west side of the river in order to bypass Island No. 10’s defenses.⁷⁰ The canal was completed on 31 March, and shortly thereafter, steamboat transports arrived at New Madrid in order to ferry Pope’s forces across to the east side of the river.⁷¹ Once on the east side, Pope’s forces quickly seized Tiptonville and then moved north toward Island No. 10. Pope’s forces seized Island No. 10 by 8 April and thus opened the Mississippi River all the way to Fort Pillow, Tennessee.⁷² With this Confederate defeat, the upper Mississippi and Tennessee River Valleys were on the cusp of being under Union control.

As Pope conducted his operations, Halleck tried to convince Buell, who occupied Nashville, to link up with Grant’s forces for a joint operation into southern Tennessee.⁷³ Not wanting to lose his independent command, Buell ignored the request and continued his planning efforts to conduct operations aimed at Chattanooga.⁷⁴ Without Buell’s manpower and cooperation, Halleck did not have the combat power to pursue and destroy Johnston’s forces. In order to maintain some momentum, Halleck ordered Generals C.F. Smith (who was temporarily in command of Grant’s forces) and Sherman to conduct raids into southern Tennessee with the object of destroying the Memphis & Charleston and the Mobile & Ohio Railroads.⁷⁵ On 11 March, President Lincoln designated Halleck as the “over-all [commander] of the Knoxville-

⁶⁹ Foote to Halleck, March 17, 1862, *OR*, ser. 1, vol. 8, 620-621.

⁷⁰ Pope to Halleck, March 19, 1862, *OR*, ser. 1, vol. 8, 625.

⁷¹ Pope to Halleck, March 31, 1862, *OR*, ser. 1, vol. 8, 650-651; Bowery, 20.

⁷² Foote to Halleck, April, 8, 1862, *OR*, ser. 1, vol. 8, 674.

⁷³ United States Military Academy (USMA), Vincent Esposito, and Frederick Praeger, *The West Point Atlas of American Wars*, Vol. 1, 1689-1900 (New York: Frederick A. Praeger, 1959), 31.

⁷⁴ USMA, Esposito, and Praeger, 31; Daniel, 37.

⁷⁵ Daniel, 74-78.

Missouri River area,” which consolidated Buell’s area of operation and forces under Halleck’s command.⁷⁶ With this new authority, Halleck ordered Buell to join C.F. Smith/Grant’s forces at Savannah in order to conduct a joint attack against Corinth, where Johnston’s forces were gathering.⁷⁷

While Union forces consolidated at Savannah and Pittsburg Landing, Confederate forces under A.S. Johnston and Beauregard reorganized and consolidated at Corinth.⁷⁸ In order to regain the initiative, Beauregard wrote to Johnston and recommended a bold counterattack aimed at destroying Grant’s forces.⁷⁹ Understanding the high stakes and risks, President Jefferson Davis approved the plan to consolidate Confederate forces (from both the Mississippi and Tennessee River Valleys) at Corinth and attack Grant’s forces at Pittsburg landing, setting the conditions for the Battle of Shiloh (or “Pittsburg Landing”).⁸⁰

On 3 April 1862, Johnston issued his marching orders to move approximately forty-thousand of his troops – divided into three different corps – from Corinth to Pittsburg Landing along two dirt roads.⁸¹ Due to weather and internal synchronization issues, Johnston’s forces did not arrive at the battlefield until 6 April.⁸² Despite the delay, Johnston pressed on with the operation, intending to attack Grant’s left flank and push Union forces against the Snake and Owl

⁷⁶ USMA, Esposito, and Praeger, 31.

⁷⁷ Daniel, 104-105; Halleck to Buell, March 16, 1862, *OR*, ser. I, vol. 10, pt. 2, 42.

⁷⁸ Halleck to Buell, March 29, 1862, *OR*, ser. 1, vol. 10, pt. 2, 77.

⁷⁹ Cooling, 238-239; USMA, Esposito, and Praeger, 30.

⁸⁰ James Arnold, “Shiloh 1862: The Death Of Innocence,” *Osprey Military Campaign Series 54* (London: Osprey Publishing, 1998), 8-10; Daniel, 46-47.

⁸¹ Daniel, 120-123; USMA, Esposito, and Praeger, 31; Johnston to President Davis, April 3, 1862, *OR*, ser. 1, vol. 10, pt. 2, 387.

⁸² Daniel, 123-128; USMA, Esposito, and Praeger, 33; Bragg to Johnston, April 4, 1862, *OR*, ser. 1, vol. 10, pt. 2, 391; Arnold, 24.

Creeks in order to cut them off from Pittsburg Landing.⁸³ At around 5:30 a.m. on 6 April, Johnston gave the order to attack the unsuspecting Union forces dispersed from Shiloh Church to the Tennessee River.⁸⁴ By mid-afternoon, Sherman and McClernand's defensive lines were broken and retreating back to the Pittsburg-Corinth road, while Prentiss's division to the left attempted to hold their position as long as possible.⁸⁵ The Confederates achieved the tactical surprise.⁸⁶ By 5:30 p.m., however, Beauregard, who took over for A.S. Johnston, called off the fighting for the night because his men were exhausted from the day's fighting and a faulty intelligence report claimed that Buell's army was still on the move and far away from the objective.⁸⁷ That night, while Beauregard was busy planning his final attack, Grant's reinforcement from Savannah and Crump's Landing arrived at Pittsburg Landing and reinforced his defensive lines.⁸⁸ Additionally, the advance element from Buell's army also arrived and were sent across the river to execute a counter-attack on the confederate's right flank in the morning.⁸⁹ On the morning of 7 April, Grant and Buell's forces, numbering up twenty-five-thousand men, executed an uncoordinated counterattack against the Confederate lines.⁹⁰ Beauregard and his generals were taken by surprise and spent the rest of the day trying to hold their defensive lines. At 5:00 p.m., Beauregard knew that the battle was lost and withdrew his forces to Corinth.⁹¹

⁸³ USMA, Esposito, and Praeger, 34; John Fiske, *The Mississippi Valley in the Civil War* (Cambridge: The Riverside Press, 1900), 75-81; Bowery, 23.

⁸⁴ Daniel, 145 and 197-201; USMA, Esposito, and Praeger, 34.

⁸⁵ Daniel, 185-191; Arnold, 40 and 68.

⁸⁶ Daniel, 164; Bowery, 25.

⁸⁷ Arnold, 72; Bowery, 27.

⁸⁸ Daniel, 262-265.

⁸⁹ Ibid., 265.

⁹⁰ Arnold, 74; Bowery, 28.

⁹¹ Daniel, 290-291; Bowery, 28.

The loss of Pittsburg Landing had huge ramifications for the Confederacy's western theater. Corinth had to be evacuated on 29 May when Halleck's consolidated army of over one-hundred-thousand men approached from Pittsburg Landing.⁹² This forced the Confederates to retreat about sixty miles south to Tupelo and yield the strategic railroad junctions of Memphis & Charleston and Mobile & Ohio, which "gave the Federals possession of the only railroad [that] directly connected the Mississippi river with the seaboard of Virginia and South Carolina."⁹³ A week later on 5 June, the "Federal fleet found Fort Pillow abandoned," which facilitated the surrender of Memphis on the following day and opened the Mississippi River all the way to Vicksburg.⁹⁴ While the Tennessee River Valley was effectively lost to the Union, Confederate leaders held onto the strategy of needing to retain the Mississippi River and President Davis appointed General John C. Pemberton to take on that effort.⁹⁵ Reciprocally, Halleck appointed Grant to command the Army of the Tennessee and tasked him to defend the Union gains while planning to seize the rest of the Mississippi River as conditions allowed.⁹⁶ Nonhuman actions, including the climate and pathogens, would play a pivotal role in the Union's campaign to open the Lower Mississippi River.

In the early months of 1862, as Grant and his army began their offensive campaign to seize the Mississippi River from the north, Union forces also tasked Navy Captain David Farragut to do the same from the south. On 20 January 1862, Farragut took command of the West Gulf

⁹² Daniel, 309-311. "Halleck ... led Grant's, Buell's, and Pope's armies, a total of sixteen divisions with 108,500 troops present for duty."; Bowery, 29.

⁹³ Daniel, 311-312; Fiske, 136; Bowery, 30.

⁹⁴ Fiske, 136-137.

⁹⁵ Daniel, 312; Miles, 235-238; Brent announcing General Order No. 75, June 17, 1862, *OR*, ser. 1, vol. 17, pt. 2, 606.

⁹⁶ Miles, 234; Grant announces General Order No. 62, July 17, 1862, *OR*, ser. 1, vol. 17, pt. 2, 102; Halleck to Grant, August, 2, 1862, *OR*, ser. 1, vol. 17, pt. 2, 294.

Blockading Squadron and received orders to seize New Orleans and reduce the surrounding forts protecting it.⁹⁷ To assist him, in February 1862, the War Department assigned General Benjamin Butler as commander of the Department of the Gulf and tasked him to seize New Orleans as part of a joint Army-Navy force.⁹⁸

After making final modifications and preparations on Ship Island, Farragut, Porter, and Butler sailed for the mouth of the Mississippi River to commence their respective operations.⁹⁹ On 18 April, Farragut positioned Porter's mortar boat flotillas within close proximity of Fort Jackson and St. Philips in order to reduce them and force their surrender.¹⁰⁰ After two days of bombardment, Farragut assessed that the bombardment alone would not force the Confederates to surrender their positions and believed an alternative solution was required to break the perceived stalemate.¹⁰¹ On 24 April, Farragut sailed past the river forts and then defeated the Confederate River Defense Fleet that was waiting for him on the other side.¹⁰² With no other forces or defense positions to oppose him, Farragut and his ships navigated all the way into New Orleans.

When news of the defeat reached Major General Mansfield Lovell, the Confederate General in charge of New Orleans and the surrounding area, he immediately evacuated the city and moved north to Camp Moore, sixty miles north of Baton Rouge.¹⁰³ Later that day, Farragut sailed into the harbor of New Orleans and negotiated with Mayor John T. Monroe for the city's

⁹⁷ Miles, 103-105. Farragut's fleet consisted of 18 ships with 243 cannons, which were mostly made for ocean-sailing.

⁹⁸ Bowery, 30.

⁹⁹ Chester Hearn, *The Capture of New Orleans, 1862* (Baton Rouge: Louisiana State University Press, 2005), 168-172.

¹⁰⁰ Ibid., 180-186; Bowery, 32.

¹⁰¹ Hearn, 186-204.

¹⁰² Bowery, 32.

¹⁰³ Hearn, 237-238.

surrender. After nearly four days of negotiating and little progress, Farragut sent a Marine contingent ashore and lowered the Louisiana State flag.¹⁰⁴ On 1 May, Butler sent in the 30th Massachusetts Regiment to secure the city and begin the occupation.¹⁰⁵

Following the surrender of New Orleans, Farragut moved up the Mississippi with a small expeditionary contingent, commanded by Brigadier General Thomas Williams, to clear the river of Confederate outposts.¹⁰⁶ During the movement, Farragut and Williams captured Baton Rouge and other small towns before their progress stalled at the river fortress of Vicksburg.¹⁰⁷ This river bastion, with Confederate batteries positioned on top of a two-hundred-foot bluff overlooking a hairpin bend in the river, was an objective that Farragut could not capture.¹⁰⁸ On 26 May, Farragut asked for the surrender of Vicksburg from Confederate Brigadier General Martin Smith, who refused to do so.¹⁰⁹ Following Smith's refusal, Farragut shot about twenty rounds and withdrew his force back to New Orleans because he knew a larger ground force would be required to capture Vicksburg.¹¹⁰ Upon his return, Farragut received additional ground forces from Butler and recalled Porter's mortar flotilla from Ship Island in order to augment his original force and attempt a second attack. Additionally, Farragut sent a request to Flag-Officer Charles H. Davis, who was currently anchored in Memphis, that he sail down to Vicksburg with his ironclads in order to conduct a joint attack.

¹⁰⁴ Hearn, 243-248; Bowery, 32.

¹⁰⁵ Hearn, 255.

¹⁰⁶ Flag-Officer Farragut to General Halleck, June 28, 1862, *OR*, ser. 1, vol. 15, 514.

¹⁰⁷ Fiske, 138; Cunningham, 5.

¹⁰⁸ Paul Calore, *Land Campaigns of the Civil War* (Jefferson: McFarland, 2000), 90.

¹⁰⁹ Christopher R. Gabel, *The Vicksburg Campaign: November 1862 - July 1863* (Washington, DC: Center for Military History, 2013), 12.

¹¹⁰ Miles, 194-195; Ballard, 35-36.

On 26 June, Davis and Farragut arrived at Vicksburg and once again commenced a mortar bombardment in order to force the Confederates to surrender their outpost.¹¹¹

While the Union armada bombarded Vicksburg, Williams and his brigade began digging a canal on the DeSoto peninsula in order to enable “vessels to bypass the Confederate batteries and isolate the city.”¹¹² After working on the canal for about a month, more than half of Williams’s men were incapacitated due to the hot weather and malarious environment. Additionally, with the water level falling and the canal being built at a wrong angle, the entire project invited criticisms from many Union commanders.¹¹³ Regardless of its faults, Williams wanted to continue digging the canal but, in the words of one historian, the “miasmatic atmosphere soon conspired to defeat Williams’ second attempt.”¹¹⁴ Williams and his brigade returned to Baton Rouge with 2,400 out of his original 3,200 men either hospitalized or dead from malaria and dysentery.¹¹⁵ Following the failed operation, Flag-Officer Davis returned back north to support Halleck’s operation in western Tennessee and Flag-Officer Farragut returned back south to New Orleans in order to assist Butler in blocking the Red River.

After occupying Corinth, Halleck once again split his theater army into three separate field armies. He appointed Grant to command the Army of the Tennessee, Buell to command of the Army of the Ohio, and Pope to lead the Army of the Mississippi.¹¹⁶

¹¹¹ Miles, 195-200; Cunningham, 5.

¹¹² Miles, 200; Butler to Williams, June 6, 1862, *OR*, ser. 1, vol. 15, 25-26.

¹¹³ Miles, 200-201.

¹¹⁴ Anthony E. Carlson, “Conquered by the Shovel: Environmental and Military Histories of Grant’s Canal,” paper delivered at the Society for Military History Conference, April 8, 2016.

¹¹⁵ Miles, 229; T. Williams report about his expedition, July 26, 1862, *OR*, ser. 1, vol. 15, 33.

¹¹⁶ Miles, 234.

With his army split, Halleck refocused the western department's efforts and priorities toward Chattanooga, while the Confederate Army, now under the leadership of General Braxton Bragg, reorganized at Tupelo.¹¹⁷

On 11 July, Halleck received orders to become the next general-in-chief of the entire land forces and left the western department in Grant's hands.¹¹⁸ With his forces dispersed from Arkansas to the Cumberland, Grant did not have enough combat power to take the offensive.¹¹⁹ The situation changed on 13 September when Confederate Major General Sterling Price, with fifteen-thousand men, began his offensive into Tennessee. He first captured the small town of Iuka, a Union supply depot, forcing Grant to respond.¹²⁰ On 4 October, the combined forces from Major General Earl Van Dorn and Price launched an attack on Union Brigadier General William Rosecrans's forces at Corinth, which they held momentarily, but eventually retreated back because they did not have enough forces to defeat the approaching Union reinforcement.¹²¹ With the retreat of Van Dorn and Price's forces, Grant seized the initiative and launched a counter-offensive to the south.

With the help from Admiral Porter, Grant organized a joint army and navy operation to seize the river fort at Vicksburg.¹²² Similar to his campaigns in the Tennessee River Valley, Grant planned a two-prong attack, one over land and one along the river.¹²³ His overland plan called for his forty-thousand strong army to be consolidated at Jackson, Tennessee, in order to march down

¹¹⁷ Miles, 234; Bowery, 40.

¹¹⁸ Halleck to Lincoln, July 11, 1862, *OR*, ser. 1, vol. 17, pt. 2, 90; Miles, 234.

¹¹⁹ Miles, 235.

¹²⁰ Calore, 82.

¹²¹ *Ibid.*, 85.

¹²² Calore, 90-91.

¹²³ Ballard, 101.

the Mississippi Central Rail line.¹²⁴ From there, he would seize Grand Junction, Holly Springs, Grenada, and Yazoo City, triggering Vicksburg's evacuation.¹²⁵ Grant's river plan consisted of Porter sailing his gunboats south of Memphis to rendezvous with Sherman's forces. They would then sail down just north of Vicksburg and execute a penetrating attack on the north side of Vicksburg.¹²⁶ It was Grant's intention to deceive Pemberton by drawing out majority of his forces from Vicksburg so that Sherman and Porter had a greater chance of success.

On 26 December, Porter began clearing parts of the Yazoo River in order to set conditions and provide support for Sherman's attack.¹²⁷ On 28 December, Sherman and his four divisions of thirty-thousand men disembarked from their ships and attacked the Confederate forces entrenched at Chickasaw Bayou.¹²⁸ Unfortunately for Sherman and Grant, the Confederates were well aware of their plans and had prepared for this attack since November. Sherman's forces outnumbered Smith's forces two to one, but the enemy's adept use of the terrain and obstacles canalized Sherman's forces into a well prepared engagement area, which Sherman could not penetrate.¹²⁹

¹²⁴ Calore, 91.

¹²⁵ Grant to Halleck, October 26, 1862, *OR*, ser. 1, vol. 17, pt. 2, 296-297; Gabel, 20.

¹²⁶ Calore, 91.

¹²⁷ Gabel, 23.

¹²⁸ *Ibid.*

¹²⁹ Gabel, 23-25.

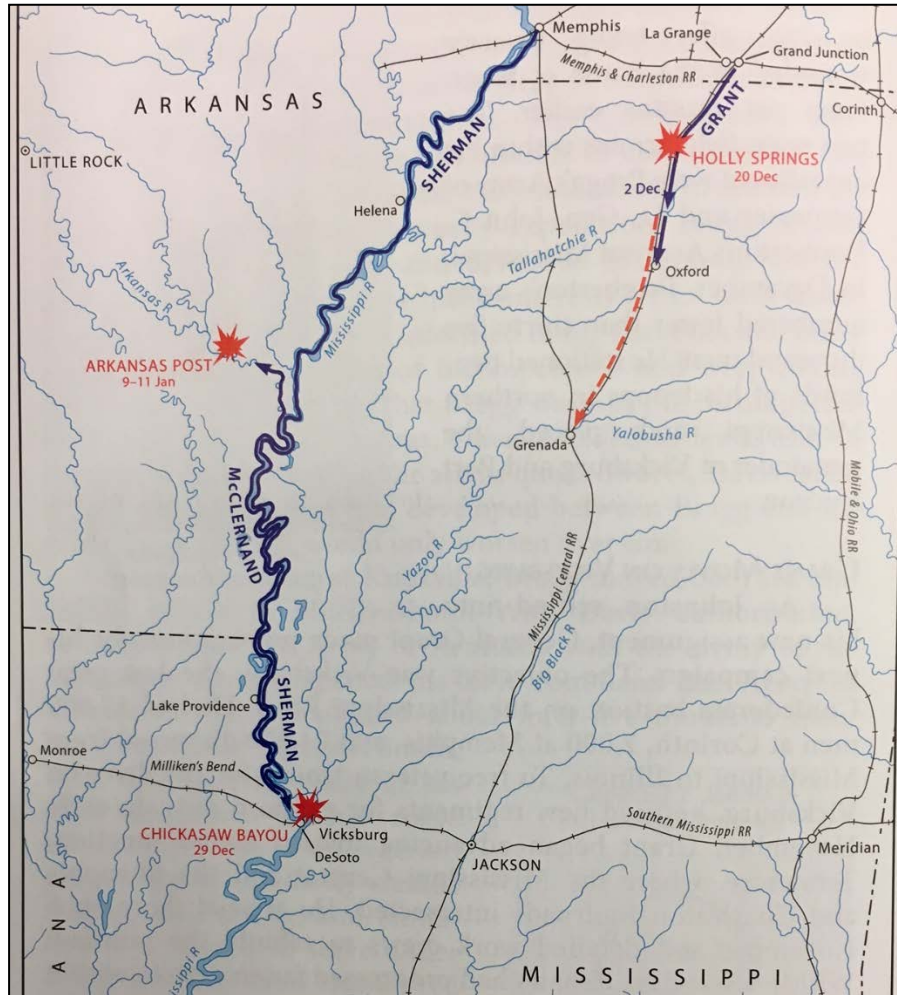


Figure 2. Grant's First Attempt at Vicksburg. Charles R. Bowery, *The Civil War in the Western Theater 1862* (Washington DC: Government Printing Office, 2014), 60.

Grant's plan to fix Pemberton's forces did not fare well either. Grant had planned to engage the Confederates along the Tallahatchie River but, when he arrived on 2 December, Pemberton withdrew south to the defensive positions that were being erected at the Yalobusha River.¹³⁰ Grant had no other choice but to continue to move his army south in order to make contact with the enemy. In doing so, he elongated his logistical lines and made it vulnerable to

¹³⁰ Gabel, 20.

attack.¹³¹ On 20 December, Van Dorn's cavalry attacked and seized the Union's main logistical base at Holly Springs, forcing Grant to halt his operation, withdraw his forces to the north, and consolidate at Young's Point.¹³²

With the setback at Holly Springs, Grant initiated his second plan to seize Vicksburg. His plan outlined five different initiatives that were designed to either bypass the river bastion or find an indirect way to force the enemy to surrender.¹³³ One of his plans revived the DeSoto canal project, but the same problems that Williams experienced led to its abandonment. The other four projects faced similar frustrations, and none of them produced effective solutions to help seize or dislodge the enemy.¹³⁴ On 31 March 1863, Grant tasked McClernand's XIII Corps to open the road south to Hard Times, Louisiana, and link up with Porter's transports in order to be ferried over to the east side.¹³⁵ Grant ordered Grierson's cavalry to conduct raids along rail lines on the eastern side of the state of Mississippi and tasked Sherman to conduct a demonstration on Snyder's Bluff in order to turn Pemberton's attention. On 30 April, McClernand's XIII Corps crossed the river near Bruinsburg and seized Port Gibson and Grand Gulf, providing a logistics base on the east side.¹³⁶

On 10 May, with all his forces on the east side of the river, Grant advanced all three Corps toward Jackson, Mississippi, and threatened to seize the Southern Mississippi Rail line.¹³⁷ This prompted Pemberton to leave the defenses of Vicksburg with seventeen-thousand men in

¹³¹ Gabel, 20; Miles, 248-250.

¹³² Gabel, 21; Calore, 94.

¹³³ Gabel, 27; For Grant's five plans see Howland, 147-151.

¹³⁴ Howland, 147-149.

¹³⁵ Gabel, 30-34.

¹³⁶ Ibid., 35-36.

¹³⁷ Gabel, 42; Calore, 101.

order to cut off Grant's supply line.¹³⁸ Unbeknownst to Pemberton, Grant's forces were foraging off the land and he did not realize this until he was already enroute. When Pemberton got the news that Grant's forces seized Raymond, he withdrew his force back to Vicksburg. On his way back, Pemberton's army made contact with McClernand's advance guard at the Battle of Champion Hill.¹³⁹ Unprepared to fight against Grant's advancing forces from Jackson, Pemberton withdrew from Champion Hill and retreated back to Vicksburg.

Grant besieged Vicksburg on 18 May and launched two separate assaults with no positive results.¹⁴⁰ As the siege progressed, Pemberton's forces experienced malnutrition due to lack of supplies and many of his men contracted infectious diseases because of unsanitary conditions and the malarious environment.¹⁴¹ With a hint of mutiny in the air, Pemberton agreed to accept a conditional surrender that Grant offered and transferred the fort to Union control on 4 July.¹⁴² With this surrender, the river fort of Port Hudson became the last Confederate line of defense to prevent the Union from controlling the entire Mississippi River.

The Port Hudson Campaign: Climate and Disease

The lower Mississippi River comprised an essential part of the Confederate's overall strategy. Once the Civil War began, many Confederate leaders wanted to expand the defenses and fortifications of river ports along the Mississippi River in order to counter the threat of impending

¹³⁸ Calore, 101; Ballard, 287.

¹³⁹ For more information on the Battle of Champion Hill see Ballard, 293-297.

¹⁴⁰ Gabel, 53-55.

¹⁴¹ Gabel, 58; Petriello, 163; Calore, 10.

¹⁴² Calore, 105.

Union operations.¹⁴³ Port Hudson was one of those strategic defenses. Along with Vicksburg, Port Hudson was strategically significant because it enabled the Confederacy to control the lower Mississippi River and keep the Trans-Mississippi trade route open for logistical and armament supplies.¹⁴⁴ The Mississippi River was important for facilitating trade and movement, however, since both river forts boasted rail lines that enabled the overland transportation of goods on a west to east axis. Additionally, Port Hudson served as a defensive outpost that provided limited protection and early warning of an attack from the north for Baton Rouge, which served as Louisiana's state capital and was only twelve miles south of Port Hudson. When Baton Rouge was captured by Union forces in late 1862, Port Hudson became the only Confederate fortification on the lower Mississippi River that prevented Union freedom of movement.¹⁴⁵

¹⁴³ Albert Plummer, *History of the Forty-Eighth Regiment, M.V.M. During the Civil War* (Boston: Press of the New England Druggist Publishing Company, 1907), 18; Lawrence Hewitt, *Port Hudson, Confederate Bastion on the Mississippi* (Baton Rouge: Louisiana State University Press, 1987), 1-5.

¹⁴⁴ Hewitt, 4; Milledge L. Bonham, *Man and Nature at Port Hudson, 1863, 1917* (Baton Rouge: Louisiana State University, 1918), 7.

¹⁴⁵ Cunningham, 17.



Figure 3. Confederate Forts in the Lower Mississippi. Charles R. Bowery, *The Civil War in the Western Theater 1862* (Washington DC: Government Printing Office, 2014), 31.

On 8 November 1862, Major General Nathaniel P. Banks received command of the Department of the Gulf with the objective of gaining control of the Mississippi River and seizing the initiative that stalled under Butler.¹⁴⁶ His ascension to command baffled most military leaders because Banks had no previous military experience and served as a prominent politician before

¹⁴⁶ Hewitt, 31-32; Halleck to Banks, November 9, 1862, *OR*, ser. 1, vol. 15, 590; Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 8-9.

the start of the war.¹⁴⁷ Prior to assuming command in the gulf, Banks lost thirty percent of his men on his first command in Stonewall Jackson's Valley Campaign, and he barely held the defensive line at Cedar Mountain when Jackson attacked.¹⁴⁸ Although Banks had a volatile military record, his keen ability to recruit a lot of soldiers and raise money for Union causes consistently placed him in a positive light with politicians in Washington, DC. As a result, President Lincoln appointed him to command the Department of the Gulf.¹⁴⁹ Banks was also an ambitious man. With his new command, he saw an opportunity to take command of the entire Department of the West, which included Grant's army, and the only thing standing in his way was the Confederate outpost at Port Hudson.¹⁵⁰

The opposing Confederate Commander at Port Hudson was Major General Franklin Gardner, who arrived at the post on 27 December 1862.¹⁵¹ Unlike Banks, Gardner was educated at the United States Military Academy as an Engineer and gained significant military experiences in Mexico.¹⁵² Gardner also commanded troops under Bragg and Polk and had a reputation of being highly intelligent and valorous in combat.¹⁵³ These diametrically opposed commanders were poised to vie for control of the Mississippi River.

¹⁴⁷ Hewitt, 31-32.

¹⁴⁸ Ibid., 32.

¹⁴⁹ Ibid., 30-32.

¹⁵⁰ John Palfrey, "Port Hudson," in *Papers of the Military Historical Society of Massachusetts*, vol. 8 (Wilmington, NC: Broadfoot Pub, 1989), 24-25; Halleck to Banks, November 9, 1862, *OR*, ser. 1, vol. 15, 590; John Ropes and W. R. Livermore, *The Story of the Civil War; A Concise Account of the War in the United States of America between 1861 and 1865. pt. 3* (New York: G.P. Putnam's Sons, 1905), 336.

¹⁵¹ Cunningham, 19.

¹⁵² Ezra Warner, *Generals in Gray: Lives of the Confederate Commanders* (Baton Rouge: Louisiana State University Press, 1959), 97; Cunningham, 19.

¹⁵³ Warner, 97; Cunningham, 19-21.

On 14 December 1862, Banks and his new Army of the Gulf, consisting of “thirty-nine infantry regiments, six field batteries, and one cavalry battalion,” arrived in New Orleans from New York.¹⁵⁴ After taking command from Butler on 15 December 1862, he gained another ten-thousand soldiers with eight batteries of artillery, which increased his total combat power to approximately thirty-thousand soldiers.¹⁵⁵ The first official order that Banks issued was to send ten-thousand men and several gunboats, under the leadership of Brigadier General Curvier Grover, to capture the town of Baton Rouge. The Confederate garrison withdrew without a fight.¹⁵⁶ This provided some protection from the north for Banks’s forces that were consolidating at New Orleans, and it also provided a future staging area to project combat power into Port Hudson when the conditions were right. Banks took the next three months to reorganize and train his forces at Baton Rouge and New Orleans, but he often hesitated to move against Port Hudson due to intelligence reports stating that the enemy’s strengths was well over eighteen-thousand men.¹⁵⁷ While this consolidation and reorganization period gave Banks time to gain situational awareness about the enemy and the operational environment, it also brought new problems for Banks and his army as they began to initiate their operations in the south.

When Banks’s army embarked on their expedition from New England to southern Louisiana in December 1862, most Americans believed they were entering one of the most pathogenic parts of the continent.¹⁵⁸ The immediate problem that Banks’s new army faced, besides the enemy, was that they were hastily recruited and organized with minimal training and

¹⁵⁴ Banks to Halleck, December 18, 1862, *OR*, ser. 1, vol. 15, 613; Cunningham, 17.

¹⁵⁵ Banks to Halleck, December 18, 1862, *OR*, ser. 1, vol. 15, 613.

¹⁵⁶ Cunningham, 17-18; Irwin Special Order No. 29, December 15, 1862, *OR*, ser. 1, vol. 15, 609.

¹⁵⁷ Banks to Halleck, December 18, 1862, *OR*, ser. 1, vol. 15, 613-614; Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 7-8.

¹⁵⁸ Andrew Bell, *Mosquito Soldiers: Malaria, Yellow Fever, and the Course of the American Civil War* (Baton Rouge: Louisiana State University Press, 2010), 14.

preparation, which put them in a relative disadvantage to operate in the South.¹⁵⁹ Charles J. Stillé and the United States Sanitary Commission pointed this out in a scathing report in 1866, which stated that “most [of the new recruits at the beginning of the war] had no experience of campaigning, and ... their officers were as ignorant as they.”¹⁶⁰ This shortfall was known to Union leaders because, as one historian observed, military planners were anxious about sending newly-generated recruits to fight in areas that were known to be hot, malarial, and swampy, which most of them were not accustomed or seasoned to operate within.¹⁶¹ One soldier from the 21st Maine Regiment recalled that when his regiment disembarked at Baton Rouge, they experienced a “sudden change from a clear, healthful, northern climate to the damp, malarious [sic] atmosphere” of the south, which they found to be “extremely injurious and unhealthy.”¹⁶² Additionally, most of these men were deploying into a hazardous theater of operation with little to no experience in field hygiene, which made them more susceptible to contracting a variety of camp diseases, including Typhus, scurvy, and dysentery, but more importantly intermittent fevers that were blamed on miasma.¹⁶³

During the nineteenth century, Americans attributed febrile ailments, and more specifically intermittent fevers, to the theory of miasma.¹⁶⁴ According to several medical

¹⁵⁹ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 6-21.

¹⁶⁰ Charles J. Stillé and United States Sanitary Commission, *History of the United States Sanitary Commission: Being the General Report of Its Work During the War of the Rebellion* (Philadelphia: J.B. Lippincott & Co., 1866), 21-22.

¹⁶¹ Bell, 2.

¹⁶² Joseph Woodward, *Historic Record and Complete Biographic Roster, 21st Me. Vols. With Reunion Records of the 21st Maine Regimental Association* (Augusta: Press of C.E. Nash and Son, 1907), 22.

¹⁶³ Matthew Smallman-Raynor and A. D. Cliff, *War Epidemics: An Historical Geography of Infectious Diseases in Military Conflict and Civil Strife, 1850-2000* (Oxford: Oxford University Press, 2004), 361-369.

historians, miasma constituted an unwholesome gas produced by the decomposing vegetable and animal matter in swamps, marshes, and other landscapes dominated by motionless water.¹⁶⁵ Once people breathed the miasma or had it sink into their skin, it allegedly triggered fevers and diseases. One antebellum physician wrote in his prize-winning essay that miasma was a product of four elements coming together, which consisted of “dead vegetable matter, a high temperature, atmospheric air, and water in moderation.”¹⁶⁶ These elements could be found near swamps and marshes, but they also existed in populated areas with poor sanitary conditions. Physician Charles Caldwell also warned that, “vegetable matter, with the cooperation of heat and moisture will every where [sic] produce disease, hence the great necessity for enforcing the utmost cleanliness in large cities and towns, particularly the removal of all collections of vegetable matter.”¹⁶⁷ In 1862, the United States Medical Sanitary Commission Report on *Miasmatic Fevers* accepted the prevailing wisdom about the origins of miasma and blamed the “paludal poison” for causing intermittent fevers and diseases amongst the general population.¹⁶⁸ While the concept of miasma dates back to ancient Hippocratic medicine, “modern epidemiologists recognize that endemic malaria, [or certain miasmatic-connected diseases, are] spread by the bite of the female anopheles

¹⁶⁴ Lois N. Magner, *A History of Infectious Diseases and the Microbial World* (Westport, CT: Praeger, 2009), 19-20; Charles Caldwell, *An Essay Upon the Nature and Sources of the Malaria or Noxious Miasma: From Which Originate the Family of Diseases Usually Known by the Denomination of Bilious Diseases; Together with the Best Means of Preventing the Formation of Malaria* (Philadelphia: Carey & Lea, 1831), 12-14.

¹⁶⁵ Alfred T. Magill, *Three Lectures on the Origin and Properties of Malaria or Marsh Miasma: With the Best Means of Preventing Its Formation and of Obviating Its Effects on the Human Constitution, When This Cannot Be Done: Delivered to the Medical Class of the University of Virginia* (Charlottesville: Watson & Tompkins, 1834), 54-55; Bell, 6; Magner, 19; Caldwell, 51.

¹⁶⁶ Caldwell, 31.

¹⁶⁷ Magill, 55.

¹⁶⁸ *United States Medical Sanitary Commission, Report of a Committee of the Associate Medical Members of the United States Sanitary Commission, on the Subject of the Nature and Treatment of Miasmatic Fevers* (New York: Bailliere Brothers, Publishers, 1862), 5-10.

mosquito – not miasmas.”¹⁶⁹ While this understanding of disease etiology is known in hindsight, Americans during the civil war period still associated unsanitary conditions, warm climates, and swamps to be pervasive of general disease that should be avoided.¹⁷⁰

Miasma and the conditions that produced it were well known to officers and seasoned soldiers in the 19th century. They recognized that operating in or near areas that had warm climates with many marshes could potentially jeopardize soldiers’ health. To mitigate this, both armies at the time had two popular methodologies to counter the effects of miasma. The most popular and effective method was to utilize quinine as both a prophylactic and treatment. The second method was to enforce strict sanitation standards for both the individual and the camp.¹⁷¹ This method was to be enforced by regimental surgeons, subordinate commanders, and non-commissioned officers, but lack of discipline, complacency, or the dynamic combat environment made it difficult for both armies to carry it out. Although the Germ Theory was not yet widely known during this time, the unsanitary conditions, poor field hygiene, and inability to protect fresh water sources within camps and fighting positions amplified the presence of deadly diseases.¹⁷²

To mitigate these climatic problems, one of Banks’s subordinate commanders, Brigadier General Thomas West Sherman, published a circular to reinforce the importance of sanitary conditions within his camp to prevent the growing number of illnesses in his formation.¹⁷³ To emphasize his point, Sherman referenced an inquiry directed by his surgeon which concluded that

¹⁶⁹ Carlson, 7. For more on the female anopheles mosquitoes, see Bell, 10-11.

¹⁷⁰ Alfred J. Bollet, *Civil War Medicine: Challenges and Triumphs* (Tucson, AZ: Galen Press, 2002), 51.

¹⁷¹ Stillé and United States Medical Sanitary Commission, 51.

¹⁷² Molly Crosby, *The American Plague: The Untold Story of Yellow Fever, The Epidemic That Shaped Our History* (New York: Berkley Books, 2006), 84.

¹⁷³ Bosson, 198.

the growing list of sickness and deaths resulted from dirty living conditions, consuming improperly prepared meals, and sleeping next to stagnant water sources around the camp.¹⁷⁴ Sherman's surgeon published a list of recommendations to reduce illnesses, but there remains little evidence that soldiers and commanders followed these directions, increasing the number of sick soldiers over time.¹⁷⁵ The situation did not fare any better when Banks began to maneuver his army in the climatic conditions of the south.

In January 1863, Banks was ordered to begin offensive operations in the Lower Mississippi area in order to relieve pressure on Grant's forces, but he essentially ignored this order and continued to plan his operation against Port Hudson with Farragut.¹⁷⁶ Since no help was provided by Banks, Grant created his own diversion by tasking Porter to sail past Vicksburg's guns and interdict Confederate supply ships in the Red River.¹⁷⁷ Not wanting to be outdone by Grant, Banks helped Farragut's ships get past Port Hudson's defenses by executing a feint on 7 March, which enabled Farragut to operate north of the river post and assist Porter in the Red River area.¹⁷⁸ After Farragut successfully passed the river defenses of Port Hudson, Banks returned back to Baton Rouge and looked to the west to expand his operation.¹⁷⁹

Since Banks did not have enough combat power to seize Port Hudson, he made the decision to move his forces into Louisiana in order to bypass the stronghold or envelop it.¹⁸⁰ Additionally, his ambitions of wanting to assume command of the entire Department of the West

¹⁷⁴ Bosson, 198-202.

¹⁷⁵ Ibid., 198.

¹⁷⁶ Cunningham, 18.

¹⁷⁷ Ibid.

¹⁷⁸ Banks to Grant, March 13, 1863, *OR*, ser. 1, vol. 15, 692-693.

¹⁷⁹ Cunningham, 34.

¹⁸⁰ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 7; Miles 517. Banks' 6 April 1865 letters to Stanton included multiple historical reports about the Port Hudson campaign and siege.

influenced his decision to order a movement around Port Hudson so that he could either link up with Grant's Army at Vicksburg or seek opportunities to draw out Gardner's forces from Port Hudson to engage them in the open. On 25 March 1863, Banks ordered three of his divisions to cross to the west side of the Mississippi River and move up to Alexandria, Louisiana, to block the Red River, which was a key Confederate supply route for Port Hudson and Vicksburg.¹⁸¹ The movement aimed to achieve three additional objectives: destroy Major General Richard Taylor's Confederate forces operating on the western side of the Mississippi, secure a dependable land route leading to the Red River, and open a line of communication with General Grant's forces operating near Vicksburg.¹⁸²

After crossing the Mississippi River on 8 April, Banks established his intermediate staging base in Brashear City, Louisiana, in order to consolidate his forces and project his combat power. On 10 April, Banks sent two of his divisions, under the commands of Brigadier Generals Godfrey Weitzel and William Emory, to engage Taylor's forces at Fort Bisland.¹⁸³ Additionally, Banks sent Grover's division to move to the rear of Fort Bisland through Grand Lake in order to block the Confederate retreat.¹⁸⁴ On 13 April, the Battle of Fort Bisland commenced, but the enemy quickly withdrew to Opelousas, Louisiana, after receiving reports that Grover's division was attempting to encircle them.¹⁸⁵ Although Union forces were able to claim this early victory,

¹⁸¹ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 10-12; Cunningham, 34-35; Orton S. Clark, *The One Hundred and Sixteenth Regiment of New York State Volunteers: Being a Complete History of Its Organization and of Its Nearly Three Years of Active Service in the Great Rebellion. To Which Is Appended Memorial Sketches and a Muster Roll of the Regiment, Containing the Name of Every Man Connected with It* (Buffalo: Printing House of Matthews & Warren, 1868), 72-73.

¹⁸² Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 8-10; Hewitt, 40.

¹⁸³ Richard Taylor, *Destruction and Reconstruction Personal Experiences of the Late War* (New York: D. Appleton, 1879), 129.

¹⁸⁴ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 10.

¹⁸⁵ Taylor, 132-134.

Taylor's retreating forces burned all the bridges to Opelousas and Alexandria, which effectively disrupted Banks's future movements.¹⁸⁶ Taylor later stated in his memoir that his objective at Bisland, and eventually at Opelousas, was to delay Banks's force of twenty-thousand men as much as possible since he did not have the adequate force to defeat them in the field.¹⁸⁷

Undeterred, Banks continued his movement north and reached Opelousas by 20 April, moving his forces into Alexandria by 9 May.¹⁸⁸ Banks's expedition in western Louisiana resulted in the capture of two-thousand Confederate soldiers and forced the retreat of Taylor's remaining forces to Shreveport, Louisiana.¹⁸⁹ Although Banks proved successful at accomplishing his mission on the west side of the river, it came at a cost of exposing his men to notoriously malarial conditions, which continued to accumulate even before engaging the enemy's main body at Port Hudson, who were aggressively building up their defenses.¹⁹⁰ This western expedition in the Bayou Teche inflicted a heavy toll on Banks's forces because the operation was the first time that most of his men executed a long arduous maneuver in the warm climate of southern Louisiana, reducing his tempo and operational reach. For example, from the beginning of the Brashear City to Alexandria movement, Banks's soldiers marched in the southern heat for long hours through waist-deep swamps and the Teche country's unimproved roads, which took them through areas that had widespread populations of mosquitoes and various parasitic insects that

¹⁸⁶ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 10; Charles Bosson, *History of the Forty-Second Regiment Infantry, Massachusetts Volunteers, 1862, 1863, 1864* (Boston: Mills, Knight & Co., printers, 1886), 358.

¹⁸⁷ Taylor, 127-135.

¹⁸⁸ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 10-11.

¹⁸⁹ Letter from Flag-Officer Farragut to General Grant in regards to Banks's Operation in Western Louisiana, May 1, 1863, *OR*, ser. 1, vol. 15, 308.

¹⁹⁰ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 13.

pestered them to no end.¹⁹¹ These environmental factors adversely affected soldiers because some of these insects carried and transmitted infectious pathogens (like malaria and yellow fever), which caused severe illness and deaths within the formation.¹⁹² Additionally, soldiers were moving in the excess of twelve to twenty-five miles per day under the oppressive summer heat, which intensified fatigue, injuries, and sunstroke.¹⁹³ Many men in Banks' formation questioned his command abilities. One regimental chaplain recalled, "what abominable mismanagement on the part of Banks! I think he'd better declare again, the object of the expedition being accomplished, the troops will return to Baton Rouge!"¹⁹⁴ Soldiers and subordinate units were losing focus of the operation's intent because their attention had been redirected from defeating an enemy to surviving in the malarial environment that they were literally knee-deep in. This loss of focus came from the long marches that littered the route to Alexandria, with straggling forces that reduced some of his regiments' combat power to half strength and the other half waiting along the routes to recover them prior to engaging the enemy.¹⁹⁵ The environment had significant impact on Banks's ill-prepared army and his movement into Alexandria, reducing Banks's operational reach and preventing him from maintaining his initiative.

ADRP 3-0 states that operational reach should "equalize the natural tension between endurance, momentum, and protection," because it enables units to achieve their mission, seize

¹⁹¹ Homer B. Sprague, *History of the 13th Infantry Regiment of Connecticut Volunteers, During the Great Rebellion* (Hartford, Conn: Case, Lockwood & Co, 1867), 123-127.

¹⁹² Anthony L. Komaroff, *The Harvard Medical School Family Health Guide* (New York: Simon & Schuster, 1999), 887; Jack E. McCallum, *Military Medicine: From Ancient Times to the 21st Century* (Santa Barbara, Calif: ABC-CLIO, 2008), 359.

¹⁹³ J. F. Moors, *History of the Fifty-Second Regiment, Massachusetts Volunteers* (Boston: Press of G.H. Ellis, 1893), 125.

¹⁹⁴ Sprague, 125.

¹⁹⁵ Moors, 125-127.

the initiative, and prevent early culmination.¹⁹⁶ Based on this definition, Banks limited his operational reach by adopting a high operational tempo and assuming that his army was resilient enough to endure an arduous march through an inhospitable climate and disease-friendly environment. Ironically, this eventually reduced Banks's tempo and degraded his ability to employ his forces effectively at Alexandria and eventually at Port Hudson. According to ADRP 3-0, tempo constitutes the "relative speed and rhythm of military operations over time with respect to the enemy."¹⁹⁷ Commanders control tempo in order to maintain the initiative to achieve their end state. While Banks's operational tempo may have been appropriate in relation to defeating the enemy in the Lower Mississippi area, it was not executed with regards to the environment that his army was operating in. It also sacrificed endurance and protection in the long run to achieve momentum in the short term.

After settling into his command in Alexandria, Banks established communication with Farragut and received word that Grant was unable to send him reinforcements due to his army crossing into Grand Gulf. Farragut requested that Banks move his Army up north to help Grant capture Vicksburg.¹⁹⁸ Banks found this request to be a personal embarrassment and concluded that he was left with three choices: pursue Taylor's forces toward Shreveport, assist Grant in capturing Vicksburg, or invest in Port Hudson.¹⁹⁹ After assessing his situation and conferring with Grant, Banks made the decision to invest in Port Hudson and began moving his forces from Alexandria on 14 May.

¹⁹⁶ ADRP 3-0, 4-5 to 4-6.

¹⁹⁷ ADRP 3-0, 4-7.

¹⁹⁸ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 11-12.

¹⁹⁹ Banks to Halleck, June 18, 1863, *OR*, ser. 1, vol. 26, pt. 1, 564-565.

Confederate forces under the leadership of Brigadier General William Beall began to slowly fortify the stronghold of Port Hudson in August 1862.²⁰⁰ The lengthy improvements consisted of a “series of lunettes flanking each other at a distance of four hundred yards ... [which] would expose an attacker to a deadly direct, cross, and flanking fire, while at the same time allowing the garrison to ... counterattack.”²⁰¹ Gardner improved these defenses in December of 1862 by surrounding Port Hudson with rifle pits, moats, and redoubts that were about twenty feet thick and accompanied with twelve to fifteen feet ditches.²⁰² In Gardner’s opinion, “the broken country” around Port Hudson made it difficult to “fortify every point as it should be without making the lines too extended.”²⁰³ As a result, he asked that General Johnston move more troops and earthmoving equipment to Port Hudson as soon as possible. In the meantime, Gardner arranged and organized his forces into three brigades and assigned them to a specific breastwork in order to improve and defend those areas.²⁰⁴ On the riverside, the Confederates constructed additional earthworks on their elevated bluffs and reinforced it with a heavy artillery battalion that arrived from Richmond.²⁰⁵ These augmented indirect fire assets provided the Confederates the ability to inflict devastating damage to both Union gunboats and maneuvering ground forces at longer distances, which they lacked up to that point.

Gardner continued to improve the defenses around Port Hudson until early May 1863, when Pemberton sent a letter to Gardner requesting approximately five-thousand soldiers be sent

²⁰⁰ Bonham, 8-9; Cunningham, 5-9.

²⁰¹ Hewitt, 9.

²⁰² Jim Bradshaw, “History of Acadiana,” ed. Curtis Coghlan, *The Daily Advertiser’s*, no. 15 (August 1998), 10; Gabel, 13.

²⁰³ Gardner to Johnston, December 29, 1862, *OR*, ser. 1, vol. 15, 913-914.

²⁰⁴ Gardner’s General Order No. 5, January 7, 1863, *OR*, ser. 1, vol. 15, 934-935.

²⁰⁵ Hewitt, 15.

to Vicksburg in order to reinforce the defensive efforts there.²⁰⁶ Gardner reluctantly honored this request but he now had to reduce and abandon some of his defensive positions around Port Hudson in order to ensure that his one remaining brigade could effectively defend it.²⁰⁷ Although this order for reinforcements would later be rescinded by Pemberton, it created a vulnerability that Gardner could not reverse, affording Banks time to move his army to Port Hudson with little opposition.²⁰⁸ With the investment complete, Banks's force of approximately twenty-thousand men would begin their siege and assault Gardner's forces of forty-five-hundred men at Port Hudson on 23 May.²⁰⁹

The Siege of Port Hudson: The Interplay of Climate and Disease

On 20 May, after crossing the Mississippi River with captured transport ships, Banks quickly moved his forces to Port Hudson to seize an abandoned position, but he soon discovered that Gardner and his men had reoccupied their defensive posts.²¹⁰ Believing that Gardner and his men were undermanned and unprepared to repulse an attack, Banks ordered a probing attack of the enemy's defense lines on 23 May in order to assess their strength. The first to make contact with Gardner's forces was Major General Christopher Augur's division near Plains Stores (about four miles north of Port Hudson), where he was able to disperse the Confederate picket line but could not penetrate the main defensive line. Repulsed by accurate indirect and direct fires from the Confederate redoubts, Augur had to withdraw back to his siege lines in order to evacuate his

²⁰⁶ Pemberton to Gardner, May 4, 1863, *OR*, ser. 1, vol. 15, 1071.

²⁰⁷ Cunningham, 40.

²⁰⁸ Letter from Pemberton to Beall, *OR*, ser. 1, vol. 15, pt. 1, 1081; Grabau, 469.

²⁰⁹ Ropes and Livermore, 332; Cunningham, 45.

²¹⁰ Cunningham, 40; Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 12-13.

one-hundred fifty casualties.²¹¹ The next day, on 24 May, Generals Weitzel, Grover, and Dwight maneuvered their forces to the east side of the fortifications and seized the enemy's first entrenchment line, but then were repulsed back by the same accurate fires that Augur's men received the previous day, driving them back to their respective siege lines.²¹² With the enemy encircled, Banks called for a council of war on the night of 26 May and planned for a thorough and ambitious assault that would capture of Port Hudson.²¹³

Banks's plan called for a simultaneous attack from the northeast with Weitzel in the lead and Grover's Division supporting the attack, while Generals Augur and T.W. Sherman's Divisions attacked from the southwest.²¹⁴ Unfortunately, the commanders left the meeting confused about the sequence of the attack.²¹⁵ On the morning of 27 May, artillery units from both the Union army and navy began an "intense bombardment ... against the Confederate's left and center [positions]" but Banks's subordinates were slow to react.²¹⁶ Weitzel was the first to commit his force, but was soon repulsed back by accurate and heavy Confederate artillery fire.²¹⁷ Grover, realizing that Weitzel's forces were being decimated, sent two regiments to reinforce Weitzel's attack but both units were destroyed enroute by the same Confederate artillery fire that Weitzel's men faced.²¹⁸ Grover then tasked three more regiments to join the attack, which almost breached the Confederate's western lines, but the Arkansas Regiment that was on the defensive

²¹¹ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 12.

²¹² *Ibid.*, 13; Cunningham, 47.

²¹³ Hewitt, 136; Cunningham, 49.

²¹⁴ Hewitt, 136-140; Special Order No. 123, May 27, 1863, *OR*, ser. 1, vol. 26, pt. 1, 508-509.

²¹⁵ Special Order No. 123, May 27, 1863, *OR*, ser. 1, vol. 26, pt. 1, 508-509; Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 13; Miles, 534; Hewitt, 134.

²¹⁶ Miles, 534; Cunningham, 50.

²¹⁷ Miles, 535.

²¹⁸ Hewitt, 150-151.

line fiercely repulsed them.²¹⁹ Without other Union divisions attacking the defensive lines, Confederate forces concentrated their firepower on Weitzel and Grover's men with devastating effects. Sherman and Augur's divisions, not knowing when to attack, finally committed their forces at approximately 2:00 p.m. after being chastised by Banks.²²⁰ As both divisions advanced, their men struggled to navigate through both the natural and man-made obstacles of the battlefield, which gave the Confederates a chance to fix Union forces at certain points and destroy them with artillery fire. As one historian noted, "None of the Federals managed to struggle through the abatis ... their line lost all sense of regularity, and it became evident that the assault was doomed."²²¹ By 4:00 p.m., Union forces withdrew back to their original siege lines and thus the first assault on Port Hudson was over.²²² Banks sustained approximately two-thousand casualties on this first attack, with a thousand of them being attributed to Confederate cannon and rifle fires, while Gardner's forces only suffered two-hundred thirty-five.²²³ With this embarrassing setback, Banks planned for a second assault on Port Hudson, but this time he incorporated a plan to bombard the fortification with army-navy cannons for a long period of time and implement a deception plan to gain a foothold within the enemy's defensive line.²²⁴

²¹⁹ Hewitt, 151-155.

²²⁰ Banks to Weitzel, May 27, 1863, *OR*, ser. 1, vol. 26, pt. 1, 509-510; Cunningham, 57-62.

²²¹ Hewitt, 164.

²²² Banks Official Report No. 1 on Port Hudson, May 30, 1863, *OR*, ser. 1, vol. 26, pt. 1, 44.

²²³ Miles, 537; Banks Official Report No. 1 on Port Hudson, May 30, 1863, *OR*, ser. 1, vol. 26, pt. 1, 44-45.

²²⁴ Special Order No. 140, June 13, 1863, *OR*, ser. 1, vol. 26, pt. 1, 554-555; Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 14; Cunningham, 69-72.

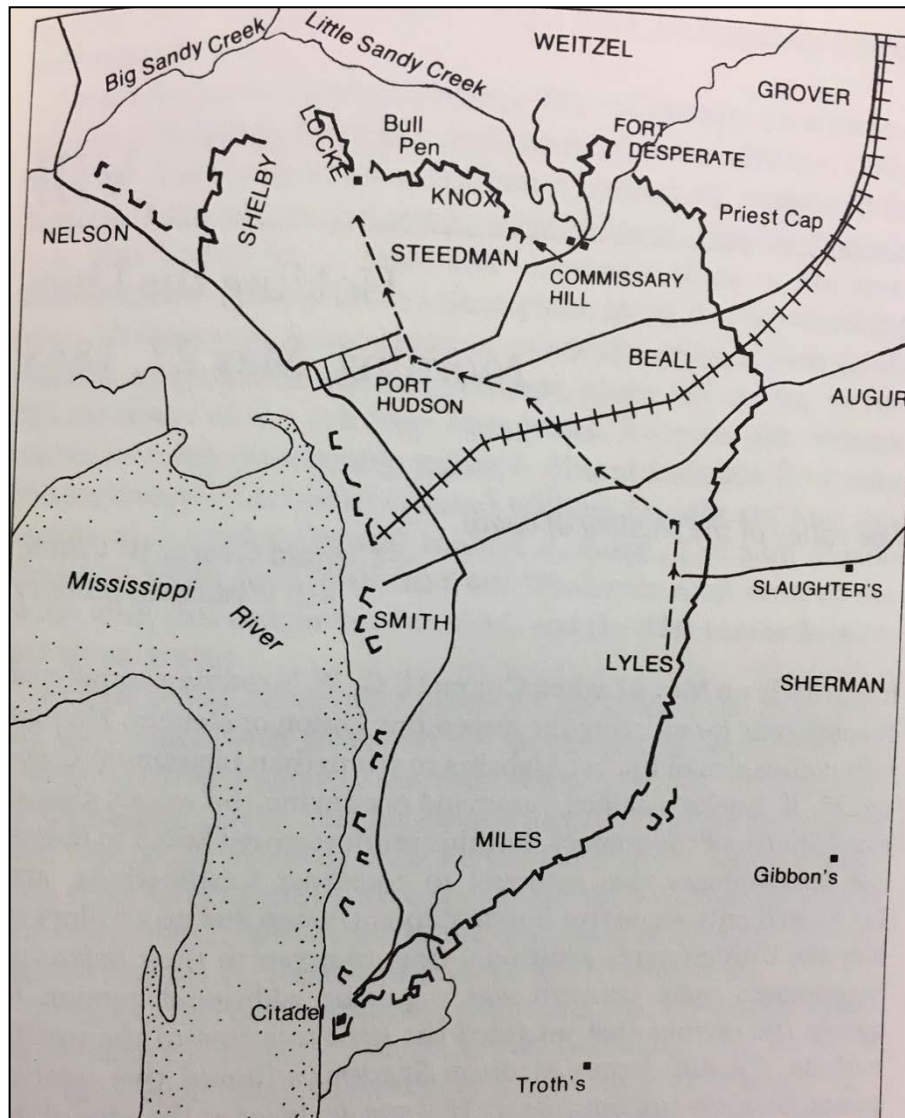


Figure 4. Union disposition of the May 27, 1863 assault. Lawrence Hewitt, *Port Hudson, Confederate Bastion on the Mississippi* (Baton Rouge: Louisiana State University Press, 1987), 139.

Banks initiated the second attack on 11 June with heavy artillery fire from both Farragut's mortar boats and army artillery units, which allowed some units to get closer to the defensive line. On 14 June, a portion of Brigadier General William Dwight's division moved toward the southern Confederate defensive position called "the Citadel" by utilizing the ravines that led directly to it, while Generals Grover and Weitzel's divisions attacked a Confederate

strongpoint called “Fort Desperate” on the eastern side.²²⁵ Augur’s division conducted a feint in the center of the enemy’s position in order to deceive the enemy’s reserves and artillery and enable the other divisions to get closer to the enemy’s defensive lines.²²⁶ Grover and Weitzel’s divisions were supposed to attack simultaneously in the direction of Fort Desperate, but early-morning fog and general confusion again desynchronized Banks’s plan.²²⁷ Grover’s men were the first ones to initiate the ground attack but soon culminated around 8:00 a.m.. due to sustaining a significant amount of casualties from enemy fire.²²⁸ Weitzel’s division, which was supposed to attack simultaneously with Grover’s men, got lost at the start of the fight and his men arrived at the same time Grover’s soldiers were retreating from their deteriorating lines.²²⁹ Despite being late to the fight, Weitzel continued to move his men toward their objective but was soon blocked by Confederate sharpshooters and natural and man-made obstacles.²³⁰ Weitzel’s division continued to assault the Confederate parapets until 10:00 a.m. that morning, but he too reached his culmination point thirty yards away from their objective due to sustaining mass amounts of casualties and subordinate commanders unwilling to lead the charge.²³¹ On the southern end, Dwight and his men were getting better results. Even though his men were stopped three-hundred yards from the Citadel’s entrance, they secured a nearby hilltop that overlooked the Confederate strongpoint, enabling them to begin constructing a redoubt for their artillery pieces.²³² Although

²²⁵ Cunningham, 82.

²²⁶ Banks to Halleck, June 14, 1863, *OR*, ser. 1, vol. 26, pt. 1, 45; Cunningham, 90-91.

²²⁷ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 14; Cunningham, 86.

²²⁸ Cunningham, 88.

²²⁹ Sprague, 148-150; Cunningham, 85-87.

²³⁰ Sprague, 150-159.

²³¹ Cunningham, 86-88; Sprague, 156-157.

²³² Banks to Halleck, June 14, 1863, *OR*, ser. 1, vol. 26, pt. 1, 46; Cunningham, 91-93.

Union forces were unsuccessful in gaining a foothold in the 14 June attack, they were able to get closer to the stronghold and occupy key geographical positions that gave them relative advantage over the enemy. While Banks portrayed the attack as a success in various official reports, some historians believe that the amount of men that Banks lost on 14 June out-weighed the cost.²³³ With significant losses to his organization from these two unsuccessful attacks, in addition to the miasmic climate of southern Louisiana, Banks decided to settle for a traditional siege tactic and starve Gardner's forces in their fortifications.

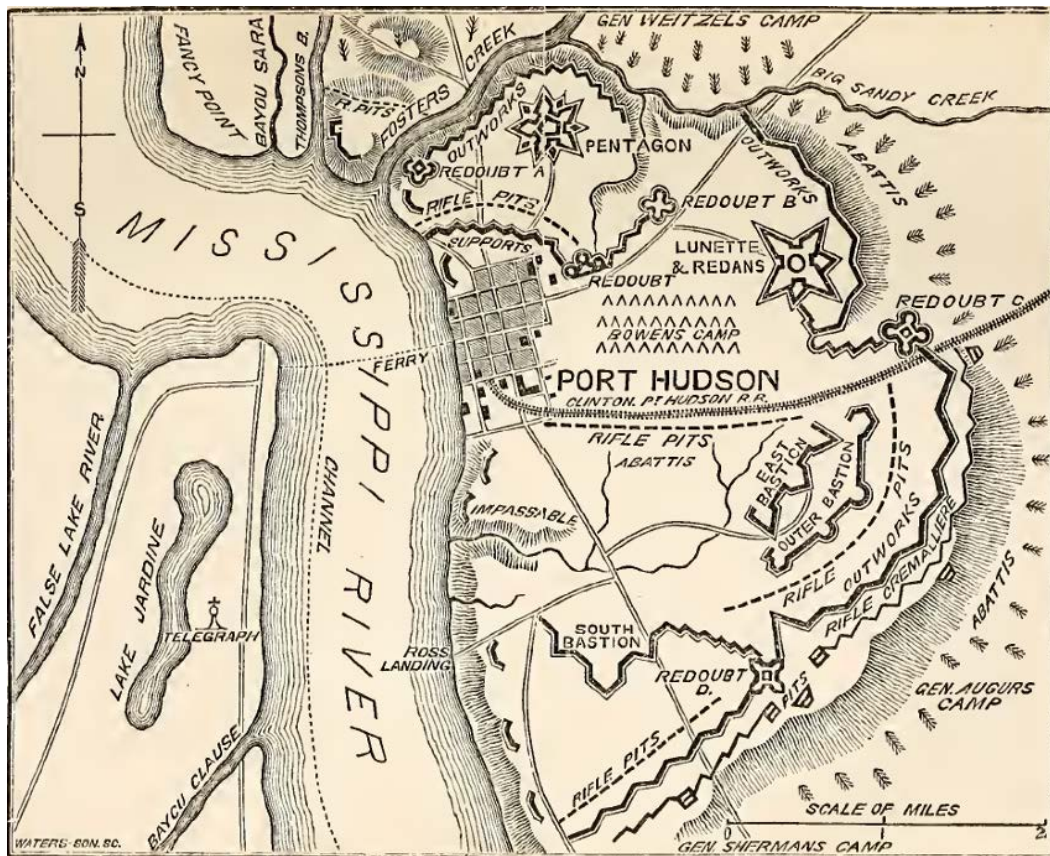


Figure 5. Siege of Port Hudson. Jefferson Davis, *The Rise and Fall of the Confederate Government*, vol. 2 (New York: D. Appleton and Company, 1881), 421.

²³³ Banks to Stanton, April 6, 1865, *OR*, ser. 1, vol. 26, pt. 1, 14; Banks to Halleck, June 14, 1863, *OR*, ser. 1, vol. 26, pt. 1, 45-48; Cunningham, 92-93; Miles, 540-545.

The siege lasted until 8 July, when Gardner received word of Pemberton's surrender at Vicksburg. He then agreed to an unconditional surrender on 9 July.²³⁴ The siege lasted for nearly two months and it inflicted nearly five hundred casualties for Gardner's forces but caused over five thousand for Banks.²³⁵ Additionally, sunstroke and diseases caused another four thousand casualties for Federal forces and two hundred for Gardner's men.²³⁶

Finally, during the forty-eight days of continuous siege operations, soldiers from both sides were constantly exposed to the elements with little to no reprieve. This enabled opportunistic pathogens to find large amount of hosts because of the unsanitary battlefield conditions exacerbated by the warm climate. For example, during rainstorms, the rifle-pits and entrenchment lines that soldiers on both sides occupied, filled up with water because they were not built or equipped with adequate draining systems, which left stagnant water available for vectors like mosquitoes to thrive.²³⁷ This often led to the miasmatic conditions that soldiers had to operate in, increasing the number of illnesses on both sides. One Union soldier, Albert Plummer, wrote in his journal that many men in his regiment were "suffering badly from rheumatism, malaria and kindred ailments, acquired from lying in the rifle pits, which [were] much of the time half full of water."²³⁸ There is little evidence that commanders ordered soldiers to drain the pits despite the clear stagnant water-malaria nexus. On the other side, Corporal Walter Stephens Turner, a soldier from the 39th Mississippi Infantry Regiment, recalled being constantly "wet and muddy from lying in the ditch," which he attributed to his fever and the growing number of

²³⁴ Hewitt, 173; Ballard, 410-411.

²³⁵ Hewitt, 173.

²³⁶ Hewitt, 123; Jackson to Johnston, July 9, 1863, *OR*, ser. 1, vol. 26, pt. 1, p. 144; Cunningham, 12.

²³⁷ Cunningham, 72; Stephens Turner, Diary, June 16, 1863, Port Hudson States Historic Site; Moors, 198-199.

²³⁸ Plummer, 41.

illnesses that decreased his regiment's combat power.²³⁹ With lack of food, medication, and access to potable water, Confederate forces were slowly being destroyed not only from Union forces, but also from the harsh climate and the unsanitary conditions of their defensive areas.²⁴⁰ Banks's forces were struggling with the same adverse conditions, but they had access to medications that alleviated some of the illnesses attributed to miasma.

Quinine was considered to be a combat multiplier for both sides during the civil war.²⁴¹ It was extracted and synthesized from a Peruvian bark in cinchona trees that were only available in South America, and it was heavily produced and utilized to treat malarial symptoms prior to the war.²⁴² During the war, the stockpile of quinine decreased and the United States Sanitation Commission experimented with different medicines to treat the symptoms of miasma. With mixed results, the commission soon abandoned the idea and turned to utilizing the remaining quinine stockpile as a prophylactic for those that will be operating in areas of malarial influences.²⁴³ In order to meet the expected demand, the sanitation commission recommended the production of "quinine wine or bitters," which essentially mixed quinine with whisky or wines.²⁴⁴ These mixed medications were available for Union surgeons to requisition from the Surgeon

²³⁹ Corporal Walter Stephens Turner Diary, June 19, 1863, Port Hudson States Historic Site.

²⁴⁰ Richard Ford, "I Fear...We Must Go Up: With a Confederate Inside Port Hudson," ed. Russell Surles in *Civil War Times Illustrated* 25, no. 10 (February 1987), 29.

²⁴¹ Bell, 6.

²⁴² Stephen Rogers, *Quinine As a Prophylactic or Protective from Miasmatic Poisoning, a Preventive of Paroxysms of Miasmatic Diseases, Together with Some Remarks Upon Its Use in the Treatment of Developed Miasmatic Diseases* (Albany: Steam Press of C. Van Benthuyssen, 1862), 3; Bell, 30.

²⁴³ United States Sanitary Commission, *Report of a Committee Appointed by Resolution of the Sanitary Commission, to Prepare a Paper on the Use of Quinine As a Prophylactic against Malarious Diseases* (Washington: McGill, Witherow & Co., printers, 1862), 18-19.

²⁴⁴ United States Sanitary Commission, 6-10.

General, but unavailable to the Confederates.²⁴⁵ Because of the Union naval blockade, the availability of quinine remained low for the Confederacy throughout the war.²⁴⁶ This was especially true at Port Hudson. Gardner's men did not readily have access to medication or medical supplies, and therefore, they had to rely on alternative medicines or black markets to treat the chills and fever that were plaguing the soldiers on the line.²⁴⁷ Although antebellum and civil war physicians believed that quinine cured malarial effects, contemporary medical science reveals that this synthesized bark-abstract only suppressed the symptoms of malaria and does very little to prevent a patient from contracting it.²⁴⁸

Conclusion

As the Port Hudson campaign suggests, military planners and commanders need to expand their traditional view of how the effects of climate and pathogens are accounted for within their operational planning. While ATP 2-01.3 (IPB) provides operational planners an adequate outline of things to consider in regards to operational climatology, the publication does little to expand on how analyzing climatic factors can help commanders preserve their combat power, maintain tempo, and maximize operational reach. In the end, commanders and planners must consider and analyze the effects of the climate holistically. The processes, capabilities, and publications to analyze such considerations exist in the current operating and planning structures of the Army, but are not capitalized due to assumptions, systems-complacency, and an over reliance on the efficacy of modern medicine.

²⁴⁵ United States Sanitary Commission, 19; Bell, 31.

²⁴⁶ Robert Denney, *Civil War Medicine: Care and Comfort of the Wounded* (New York: Sterling, 1995), 11; Bell, 31.

²⁴⁷ *Southern Historical Society Papers Volume XIII January to December 1885* (Richmond, VA: The Society, 1891), 329; Bell, 31.

²⁴⁸ Bell, 30.

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